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FINANCIAL TIMES

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NEWS SUMMARY

GENERAL

Lebanon West may seek new military leaders quit

The Lebanese military Cabinet set up by President Frangieh at the weekend in an effort to stop the fighting between Palestinian guerrillas and Lebanese Phalangists resigned yesterday, as fighting continued in the streets of Beirut.

The resignation came after the eight-member Cabinet held its first meeting under the President. Brigadier Nureddin Rifai, the Premier, said his Government had submitted its resignation and the President was to stay in office until a new Government could be formed.

Brigadier Rifai said in his letter of resignation that the military Cabinet came for "a specific mission" and that the new Cabinet's task would be to "restore order".

On the border with Israel, Lebanese artillery was in action against Israeli guns near the village where Israeli planes had raided the day before.

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'Troops out' Ulster query

Ireland would not comment last night on the statement by the Rev. W. Arklow, one of the Northern Ireland clergy members who negotiated the truce with the Provisional IRA, that Britain was committed to withdrawing from Ulster if the Ulster Convention failed.

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Ransom refused

Tanzania rejected the demand for \$200,000 and release of two detainees by the kidnappers of four students taken across the border to Zaire, one of whom, the only woman, was freed to deliver her baby.

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Russians dock in space

Russia's Soyuz 15 cosmonauts made a successful docking yesterday with the Salyut 4 space station in pitch darkness, said Tass.

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Evel bows out

Evil Kneivel, the stuntman, was taken to hospital from under his motor-cycle after falling to clear a single-decker bus at Wembley.

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Air strike delayed

The 700 Heathrow maintenance men seeking a \$100-a-week rise for work on British Airways TriStar jets flying to Europe decided against a holiday week-end strike.

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Stonehouse move

Extradition proceedings against runaway MP Mr. John Stonehouse, and Miss Sheila Buckley, his secretary, in Melbourne were adjourned till Friday to allow defence counsel to appear before the Victoria Supreme Court.

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Europe quakes

Earthquakes hit many parts of southern Europe yesterday. Richter scale recordings were high and experts said damage would have been disastrous if inhabited areas had been affected.

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Briefly

No newspapers are expected in France today because of a 24-hour strike by private workers against a move to publish the strikebound newspaper Libération in Belgium.

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BUSINESS

Cabinet split grows as Benn sticks to EEC jobs claim

BY RICHARD EVANS, LOBBY CORRESPONDENT

The deep division in the Government over the referendum campaign widened further yesterday when Mr. Anthony Wedgwood Benn, Secretary for Industry, rejected all criticisms levelled at him by his pro-Market Cabinet colleagues.

Following the outspoken statement by Mr. Denis Healey, Chancellor of the Exchequer, strongly rebutting Mr. Benn's claims that British membership of the EEC had cost 500,000 jobs, the Industry Secretary insisted that, although his figures had been attacked, they had not been effectively challenged.

The clash between Mr. Benn and Mr. Healey increases the prospect of more public infighting among Ministers as politicians prepare for the last eight days of the referendum campaign.

There are signs that leading pro-Market Ministers are ready to strike back hard at anti-Market Ministers, and behind the statement by Mr. Healey and a weekend speech by Mr. James Callaghan, the Foreign and Commonwealth Secretary, lies a belief that Mr. Benn has been allowed to get away with too much.

Pro-Market Ministers fully realise that they cannot allow to go unchallenged what they regard as Mr. Benn's spurious claims that 500,000 jobs have already been lost and £500m. of capital diverted to Europe because of British membership of the EEC.

Significantly, Mr. Healey's statement was issued by the Treasury without the knowledge of Transport House. Without referring to Mr. Benn by name, it went further than any other Minister has so far gone towards accusing him of lying by the use of his made-up official statistics.

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Grocery Index rises by 5.02

FT GROCERY PRICES index went up 5.02 points this month, the biggest rise since last November. Bread, flour, meat, raw potatoes and frozen food were the major categories to push up the index, which now stands 26 per cent. above its May 1974 level at 183.41.

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U.K. ELECTRONICS industry is accused of lax cost consciousness and credit control in a report on the performance of 60 leading manufacturers.

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STERN GROUP moratorium, to last at least until July 31, 1975, has been drawn up by Mr. Kenneth Cork, liquidator of the company, which effectively controls the group.

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NATIONAL PRESS Finance Corporation to buy printing plant for London newspaper publishers as well as administering a newspaper subsidy and a scheme for redistributing advertising revenue, is proposed by the TUC in its recommendations to the Royal Commission on the Press.

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LIFE ASSURANCE actuaries have been issued with stricter guidelines about their responsibilities and conduct by their professional organisations.

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BANK of England executive director Mr. C. W. McMahon urged major OECD countries to take steps to relate their economies at a seminar in Tokyo.

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NATIONAL SAVINGS continued to attract improved support in April, with preliminary figures showing net receipts of £8.6m. against a net outflow of £7.8m. in April last year.

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BRITISH AIRWAYS and other international airlines using U.K. airports plan a major drive to eliminate illegal ticket sales.

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Exhibition centre manager resigns

NATIONAL EXHIBITION Centre general manager, Mr. R. A. Cunningham has resigned. Mr. Robert Booth, the chairman, will be taking on additional duties for the time being.

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TURKEY'S foreign trade deficit in the first four months of this year reached a record of more than \$1,000m., which is nearly 180 per cent. more than in the same period last year.

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PERIODICAL Publishers Association warned advertising agencies that a situation in which they frequently required extended credit could not continue indefinitely.

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CEDAR LINE cargo service taking Falkland Islands with Beirut begins fortnightly operations to-day.

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MOTHERCARE is to extend its children's clothes range into the school age market.

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TESSEL SECURITIES is to receive compensation of just over £5m. for its local holdings in Guyana, which have been sequestered by nationalisation.

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At their EEC Council session here today Ministers agreed to make a rapid response to Lisbon's requests for an extension of its current trade agreement with the Community to include financial and industrial co-operation, as well as a better deal for Portuguese migrant workers in the EEC.

At the same time, the Nine will be ready to discuss improvements in the commercial aspects of the existing arrangements which came into force at the beginning of 1973.

Further contacts with the Portuguese will take place in Brussels this Wednesday, at a meeting of the joint committee set up under the trade agreement.

On Sunday, Dr. Garrett FitzGerald, Irish Foreign Minister and President of the Council, will start a three-day visit to Lisbon to explain the Community's position and seek further details of the Portuguese requests.

The EEC Commission has proposed detailed proposals for a mission's president, told the negotiating mandate by June 11, and Dr. FitzGerald will also conduct a serious dialogue with the oil-producing countries on energy supplies.

The Commission's plan includes the negotiation of product by product agreements, with provisions for stockpiling, financial aid to encourage diversification of production in the developing countries, and more processing of commodities on the spot, as well as a new world-wide system for guaranteeing the export earnings of the poorest countries.

Industrial countries, and any others who could afford to, should help to finance the scheme, in the Commission's view.

Mr. Ortoli said the Community should not try to avoid discussing the indexation of raw material prices, as some producing countries have urged, but insisted that this was not the right solution. Such a system would help the richer countries rather than the poorer ones, he argued.

Jane Bergeron writes: The Armed Forces Movement's General Assembly met to-day and it is thought to have debated the possibility of developing mass participation without using the political parties through workers' revolutionary councils being set up by the extreme left.

His members were "100 per cent. angry" at the lock-out decision and he was seeking legal advice as he believed the companies' action was contrary to their responsibilities under the Independent Broadcasting Authority Act.

Behind the dispute is ACTT's demand for lump-sum payments of £231 for all 3,500 ITV technicians which the union claims they are owed from the 1973 wage freeze. Management maintains that whatever was owed from that period has been taken care of in subsequent pay settlements and has threatened to continue the lock-out until the demand is dropped.

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Lock-out takes ITV stations off air again after strike

BY ROY ROGERS, LABOUR CORRESPONDENT

THE DIFFICULTY of guaranteeing balanced referendum campaign coverage in the face of guerrilla strike action by technicians was a major element behind the Independent Television Companies' decision to lock-out technicians who ended their three-day pay strike yesterday.

As a result of that decision only three of the 15 ITV companies were on the air yesterday and London area programmes, virtually unaffected since Friday, were the only ones to be seen.

Least night both sides appeared to be in deeply entrenched positions and ready to continue with their trial of strength which could keep most ITV programmes off the air for some time.

Although the Advisory Conciliation and Arbitration Service has been in touch with both sides over the week-end no meetings have been arranged and the chances of an early settlement look slim.

Last week's ACAS brought the two sides together for several lengthy sessions of fruitless negotiation.

Typical of the dispute, based in Newcastle, Westward TV, Plymouth, and Channel were the only ITV stations on the air yesterday and even they suffered from the lack of programmes.

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The Chancellor, who had earned £12,000 in the world markets this year, Britain was earning nearly £40m. net in its trade in manufactures but in the Common Market the nation was losing £10m.

"Britain's livelihood depends on us selling our manufactures. If we remain in the Common Market where we buy so much more than we sell we will gradually put Britain on the dole," Mr. Benn declared.

Already, he argued, Britain's trading losses in Europe were damaging our major industries and unemployment was not merely a threat to workers in the steel, textile and car industries. As our national income suffered the might would spread through shops and offices and even into the public services.

Another Minister to clash openly with Mr. Benn over the weekend was Mr. Callaghan, who said in mid-afternoon on Sunday that Britain was more likely to benefit from North Sea oil if we stayed in the Community.

Earlier, Mr. Benn had argued in a BBC radio interview that the EEC would limit Britain's freedom of operation over the oil.

In Mr. Callaghan's view, leaving the Market would be a setback to the investment the country would need to take full advantage of the oil supplies.

Membership would also mean that more money would be available to meet the heavy costs of development.

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The City and the EEC Page 29

Referendum News Page 11

Asked about Mr. Healey's comments yesterday, Mr. Benn insisted that the figures he had given had not been challenged.

The argument was one of interpretation and the figures showed that British entry into the EEC had made the country's problems a great deal worse. He forecast that there would be a continuing deterioration if there was a Yes vote.

He did not propose to attack Mr. Healey personally, and he believed the campaign would continue to be fought without personal references. "I cannot dispute that my figures have been attacked, but they have not been challenged," Mr. Benn declared.

In a prepared statement given at a National Referendum Campaign Press conference, Mr. Benn argued that Britain provided jobs, bought its food and paid its

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EEC to offer Portugal conditional aid

BY REGINALD DALE, COMMON MARKET CORRESPONDENT

DUBLIN, May 26.

THE EEC countries to-day decided to make a special effort to help Portugal overcome its difficulties through an offer of closer links with the Community. But the Nine will make it clear to the Lisbon Government, as tactfully as possible, that the offer is conditional on the development of genuine democracy in Portugal.

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Pay rises threat to P.O. finances

BY CHRISTOPHER LORENZ

A DETAILED Post Office report on its rapidly increasing deficit is about to go to the Government, showing that labour costs are rising faster than expenditure on materials.

The report will be extremely controversial in view of recent Government criticism of some PO wage settlements, and because a new increase in telephone charges later this year now appears inevitable, as do either higher prices or a reduced service—or both—on the postal side.

Telephone charges were raised only a month ago by an average of 29 per cent. for residential and 41 per cent. for business users.

Postal rates went up sharply in March, by 56/87 per cent. to 7p for first class letters and 51p for second class.

Post loss

After a deficit of about £300m. in its last financial year (to March 31), the P.O. forecast a loss of £50m. for the current year, if inflation did not worsen.

The postal side is now running at a much higher annual rate of loss—though the P.O. will not confirm union estimates of £150m. a year—and the telecommunications service is also running at a loss.

No official figure has yet been put on the likely overall deficit, though it is not currently expected to be as high as the widely speculated £300m.

The last round of price increases has hit traffic on the telephone and postal sides. The P.O. is expected shortly to begin a television campaign to promote use of the telephone, especially in off-peak periods, and Mr. A. S. C. Curran, head of the P.O.'s postal division, last week warned of further mail cuts, saying that since the March price rise there had been a "significant volume of opinion" that "the services are providing more than is necessary."

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Crucial week for four big pay claims

BY ROY ROGERS, LABOUR CORRESPONDENT

FOUR KEY groups of workers will this week seek to match or improve on the 30 per cent. figure which seems to be emerging as the average level of pay settlements as the annual wage round draws to a close.

They will no doubt be spurred on by a 31 per cent. deal concluded over the week-end by 30,000 power engineers and by the knowledge that the Government and both sides of industry are seeking to replace the social contract, which should have meant increases of around 20 per cent.—with something more effective in time for the opening of the next annual round in the autumn.

Railwaymen expect to hear the result of arbitration on their 30 per cent. claim on Thursday. They have rejected as derisory a 21.2 per cent. social contract offer and threaten to consider industrial action if they are not satisfied with the award by the Railway Staff National Tribunal.

Industrial action is also threatened by leaders of 400,000 local government white collar workers unless they receive a "realistic" reply to their demands for 35 per cent. increases at talks on Friday.

Last night Mr. John Daly, national officer of the National and Local Government Officers' Association and secretary of the union negotiators, warned that without a reasonable offer staff would "erupt into industrial action seriously affecting services to the community."

Action plans

Contingency plans for official industrial action to support the claim, for £10 across the board plus 15 per cent., were already being drawn up ready for Nalgo's annual conference in two weeks' time, he added.

Meanwhile, in the private sector, Imperial Chemical Industries is due to reply to-day to a 55 per cent. claim from its 60,000

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£ in New York

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Spot \$2.386-3286 \$2.370-3290

1 month 0.82-0.83 0.83-0.84

3 months 2.75-2.85 2.82-2.87

12 month 11.30-11.33 11.30-11.34

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Napoli

by CLEMENT CRISP

The Russian classics admit of a variety of presentations, as producers seek to highlight different themes, or approach them with certain artistic axes to be followed. In the same way the Danish classics, the Bournonville repertoire, can be adapted and re-worked, and for her Gothenburg company Miss Catherine von Rosen has mounted a new version of the best of these, Napoli. Not really new, though, since hers is an attempt at restoring certain passages lost in the previous production by Hans Beck in the years just after Bournonville's death, and later revised by Harald Lander. Textually this has meant an expansion of the second act in the Rite of Spring, and some slight additions to the last act, but in the main the choreography is as we know it in the Royal Danish staging. Where the Gothenburg Napoli, seen last week, differs more seriously is in the manner of performing both dances and mime.

It would be unrealistic to expect that this young company could rival the Copenhagen dancers in authenticity of utterance, in capturing that bouncing lightness of movement and rich texture of dramatic playing that we recognise as the

Festival Hall

RPO/Foster

by DOMINIC GILL

The Royal Philharmonic Orchestra under Lawrence Foster began their programme on Thursday with Mozart's Haffner symphony K385: a bright, solid, unassuming account, which also transformed the (perhaps regrettable) practice of omitting the first movement's exposition, perfect repeat-even if not demonstrably authentic-a repeat which can surely serve only to strengthen the proportion and dramatic weight (and unconventional quality) of one of Mozart's greatest symphonies. The second movement, however, Foster left out not merely an arguable repeat but a whole movement. I should not personally, in fact, be greatly troubled by the omission of all of Lalo's five movements from any concert programme, since none is particularly memorable. But it could be said that if the Symphony Espagnole is worth doing at all, it is worth giving properly: why leave out such a very pretty little sequel, which offers no less grateful

Bath Festival

Opening concert

by GILLIAN WIDDICOMBE

The Bath Festival opened on Friday, not with a Glock shock to herald Sir William's first year as artistic director, but with a safe, often radiant, all-British performance of the 2nd minor Mass in Bath Abbey. How this year's festival fare under our leading, often outrageous impresario (who, over the years, turned the Proms upside down and gave the BBC a good scrubbing, most wait until later. But initially the programme range from the Monteverdi Vespers to the Fires of London without being too terribly shocking, and sensible modesty prevails. With luck, the opening 2nd minor Mass will be typical, for it was simply excellent.

Charles Mackerras is as much master of Bach as of Handel. Broadcast live on Radio 3, the performance was neither heavy nor too ornamental. Mackerras seems to understand-and far better so than many-a more "sensible" conductor-the liturgical nature of the music, and the opening Kyrie, and especially he makes the arias warm and predominantly lyrical. The Kyrie was a model of fresh, alert thinking: yet avoided over-viding bouncing. Short slurs were observed, letting the air in, but you could always feel the larger phrases developing, and the combination of the English Chamber Orchestra and the public previews from May 28.

'Oh Coward!' for West End

H. M. Tennent Ltd. by arrangement with Wroclaw Productions will present Oh Coward! a new musical revue with words and music by Noel Coward, in the West End, opening at the Criterion Theatre on Thursday, June 5. It stars Geraldine McEwan, Roderick Cook and Jamie Ross, and is devised and directed by Roderick Cook. There will be Chamber Orchestra and the public previews from May 28.

The European connection

by DENYS SUTTON, Editor of Apollo



Voltaire: portrait bust made by Marie-Anne Goulez for Catherine the Great

Napoleon once called the English a nation of shopkeepers. It was a sharp comment. But what would he say now? What would he have made of the general quality of the debate about the question of whether or not this country should break its treaty arrangements and leave the EEC?

The discussion about this major question has not been conducted on a very high level. It mainly consists of arguments about the price of food, with an occasional glance at the changes in the legal structure that will result from a closer integration and to a lesser extent, at sovereignty. Comments by politicians on the last-mentioned matter have a somewhat ironic twist, in view of the existence of the referendum itself, which inevitably diminishes the sovereignty of Parliament.

What has been depressing about the debate so far has been the lack of discussion of the cultural implications of a retreat from the Continent. Little seems to have been said by the main champions on either side about the fact that our culture is fundamentally European. It is a heritage that many treasure. For centuries, we have enjoyed artistic, literary, musical and philosophical links with the Continent.

Do these not count in the argument that we should remain part of Europe? However, to listen to the views of many of the anti-Europeans, these links would seem to be of scant concern. If, in fact, their existence is realised.

Even a cursory examination of English art and architecture underlines that this country owes much to Europe and, in its turn, that we have made our own contribution. What is fascinating within the context of the present debate is that it has been possible for a general style in art in Europe as a whole-the Renaissance or the Gothic, the Rococo or Neo-Classicism-to which each country has been able to make a significant offering, without necessarily losing its local characteristics. Does this not provide some indication of how a European system can work? Will not the cross-fertilisation be as valuable now and in the future, as it has been in the past?

One of the most "European" of all periods was the 18th century. Despite wars, England was closely related to France in respect of cultural matters. David Hume was much admired in Paris. Voltaire, a leading spirit of the Enlightenment, derived considerable inspiration from England, which he saw as a land of liberty and progress. This was one way in which we appear to our fellow Europeans.

What would the sage of Ferney have thought of the present threat to the Press occurring in England? It is not hard to

imagine that this master of a sharp and virile pen would have castigated the follies of our generation.

It was one instance of the free exchange of artistic ideas in the 18th century that even such a true John Bull as Hogarth did not hesitate to pick up ideas from the engravings of De Troy. It did not make Hogarth less of an Englishman that he was happy to derive material from the Continent.

The connections between England and European culture are too numerous to require emphasis. That they are so rich has frequently been the fertile ground for the supporters of our remaining in Europe, to which

we belong by tradition and affinities, have not made more of our own.

The very absence of such a championship of the European ideal makes it all the more obvious, it might be thought, that without the strengthening of such ties, our provincialism and self-satisfaction will increase. The prevalent belief that we are in the throes of a cultural renaissance needs to be taken with some caution.

If we move away from Europe we have a bleak cultural future. We will become increasingly deprived of the stimulus that can be provided by the fertile cultural tradition that exists on the Continent, now as in the past.

Birmingham Rep Studio

O Fair Jerusalem

by MICHAEL COVENEY

David Edgar's new play is extravagantly ambitious. The audience sits, chorister-like, on either side of the small nave of a country church. The year is 1388, the first year of the Black Death. A Knight and his Lady are locked in a stultifying marriage; an abject yoked discourse cynically to the great purpose except incidental amusement-as when a virtuous player (the excellent Derek Fuke) recounts a tale of chivalric competition. Also, and more seriously, there is a confusion as to whether the play should encompass a serious economic argument or not. Act 2 ends strikingly with the figure of an

anti-Christ feeding the peasants with sacramental bread and wine, urging them that "all should be held in common" and that the houses of the rich should be appropriated. Stirring stuff, but the scene is only developed most feelingly, later on, when a small rise in income is mentioned.

Christopher Honor's production has not treated the text with much ruthlessness, so the play rambles perhaps more than it need have done. Natasha Pyne is a very beautiful Lady. Michael Carter a good, singing linkman and David Quilter a chilling Knight as well as a stalwart, blazer thespian.

Sunday nights at the Court

Another season of Sunday night productions at the Royal Court opens next month. The first two, both in the Theatre Upstairs, will be Moving Clocks Go Slow, a "space play" by Caryl Churchill, and the second A Nevolent Society by Mary O'Malley. The first will be played at 7.00 p.m. and 9.30 p.m. on June 10, the second at 8.00 p.m. and 10.00 p.m. on July 13. The season is under the overall

direction of Chris Parr, and is presented with financial help from Memorial Enterprises, London Weekend Television and Mrs. Henry Gestner. On Sunday June 15 there will also be a concert in the main theatre, by Cleo Laine and John Dankworth; another, by Alan Price, will follow on June 27. These are to help complete the sum of £15,000 wanted for repairing the roof, almost all of which has now been contributed.

Cannes Film Festival

Vintage year

by NIGEL ANDREWS

If film festivals, like wines, have good and bad years, then Cannes 1975 will surely go down as one of the vintage events. The sun shone here for the entire fortnight of the festival, ripening a mood of optimism and enthusiasm that was evident from the beginning. The hotels, the beaches and the sea-front teemed with people looking both busy and happy, and film critics-not usually the most athletic of breeds-were seen dashing with untiring vigour from one cinema to another in an attempt to fulfil impossible viewing schedules.

For once, too, it was no pain for the critic to sequester himself for hours on end in darkened cinemas, coping with poor projection, foreign subtitles and the stumbling feet and multi-lingual apologies of people going past him in and out of the cinema ("sampling" films being an inescapable habit in a busy festival). There was hardly a day in which some fresh surprise did not emerge from among the new film-makers on view, or in which expectations of an established director's work were not fulfilled. Only a year ago people were reading the last rites over the dying body of international cinema, noting the decline in quality of the films produced, and the decline in the number of the people paying to see them. Now one might think the miracle cure has been effected: with almost indecent haste the patient is back on his feet, and the journalistic prophets of doom have been scattered to the four corners of their newspaper offices.

The remarkable thing about this year's films is that they do not even look like the products of an impoverished industry. Wajda's *The Promised Land* and Borowczyk's *Story of a Sin* are two Polish period pieces which are as opulently staged as they are grandly conceived. Two German films, Werner Herzog's *The Enigma of Kaspar Hauser* and Fassbinder's *Forgy*, boast surprisingly high production values coming from an industry so dependent on individual resources and TV sponsorship. And even where shoestring budgets are painfully in evidence-as in the two transatlantic horror flicks *The Exorcist* and *Exorcism* and the Texas Chain Saw Massacre-there is a flair and professionalism that papers over the cracks and shows how much can be achieved with how little in the illusionistic art of the cinema.

The new German cinema continues to amaze. Werner Herzog's film about an 18th century founding who is adopted and educated by a Nuremberg professor is an enthralling mixture of poetry, satire and acid period observation. The hero, Kaspar Hauser, actually existed. Discovered standing in a Nuremberg square one day at the age of 16 (the film makes him older), he was an illiterate, unkempt, half-starved man who claimed to have spent his whole previous life chained in a dark cell without ever seeing the outside world or the brutal man who kept him. From anonymity he soon advanced to an unenviable celebrity: the town curiosity, he was first put on display like an animal in a zoo, later subjected to the over-solicitous attentions of guardians and teachers.

Herzog's film celebrates the absurdities of the confrontation between "natural" man and his over-civilised fellows; but it does it with a gentleness and realism that never keels over into caricature. In sequences like Kaspar's debate with a logician (in which common sense wins out over hair-splitting pedantry), or like Kaspar's dreams, we are made aware of the natural beauty and dignity of man unencumbered by repressed desires or received ideas. And even those who do not wholly subscribe to the Rousseau-esque implications of Herzog's treatment (that education makes us many fools, and spoils many geniuses, as does illiteracy) can perceive in the film the same poetry, the same black humour and the same immaculate period sense as in Herzog's last work *Aguirre, Wrath of God*.

Fassbinder's *Forgy* is another work designed slyly to bait the bourgeois: the story of a sultry leather boy (played by Fassbinder himself) who wins a fortune on a lottery ticket and, taken up by a well-heeled play-

boy more interested in his money than in his sex appeal, soon finds himself breathing the rarefied air of the homosexual haut monde. The story ends in tragedy, but as always with Fassbinder the tone of exotic Hollywood in which the story is told. The film is nearer to the highly-wrought artifice of *Pierrot Moon* than to the realism of *Fear Eats the Soul*; but the brilliance of Fassbinder's work lies in the continuing dexterity with which he manages to juggle both styles within the framework of a single film.

In the mannerist department, no director can hold a candle to Walerian Borowczyk. After the strenuous kinkiness of *Immoral Tales*, the director's new film is an ornate essay in period melodrama. Made in Poland, *The Story of a Sin* is the chronicle of a young girl's progress from her strict Victorian upbringing to a love affair with a young man which quickly blossoms into a passion, jealousy and a final, heroically grotesque self-sacrifice. The film is a celebration of *amour fou*: completely immoral, completely crazy and yet within the context of love completely

logical. Borowczyk makes his usual play with fetishistic objects-shoes, corsets, underwear-but instead of being aimless eroticism they are here subsumed into a credible and organic narrative. The film looks superb-photography by Zygmunt Samosik, art direction by Teresa Barska-and I can see no reason why it should not do as well in London as did Borowczyk's highly successful earlier film *Blanche*.

Wajda's *The Promised Land* inspires less enthusiasm. Sumptuously adapted from a novel by the Polish writer Raymont, it tells of the corruption and class-war antagonisms that were rife during the big industrial boom in Poland in the 19th century, setting its story among the wool and cotton industries of Lodz. Wajda throws everything into the film: wide screen, colour, sweeping camera movements, opulent settings, scenes of fire, scenes of destruction, scenes (gruesome ones at that) of factory mutilations. But virtuosity is not its own reward, and in sacrificing everything at the altar of mise-en-scene Wajda ultimately leaves the political and psychological

centre of the story distressingly empty. Most of the British and American films showing in the main programme this year will be seen shortly in London: *Lenny*, *Mr. Friday*, *The Day of the Locust*. Two, however, deserve an advance mention, if only because they are the kind of films on which a second viewing might easily change one's opinion. Antonioni's *The Passenger* is the story of an American reporter (Jack Nicholson) who changes identity with another man: the new name bringing new obligations, he soon finds himself travelling across Europe as an arms-runner, giving military support to a political struggle of which he himself has only the haziest notion.

The moral hinterland through which the characters move is typical Antonioni: as the nebulous, uneasy relationship between Nicholson and the girl he picks up during his last journey through Spain (Maria Schneider). What puzzles one about the film-and precipitates its second viewing-is the identity of the two men: the first showing in Cannes-is Antonioni's injection of thriller and travelogue material into a potentially intriguing drama of identity. Here are eye-catching scenes in the African desert, or in Gaudi's Barcelona. Here are cloak-and-dagger scenes of pursuit between Nicholson and his erstwhile wife, Jenny Runacre. Only a second viewing of the film will determine whether the pieces fit together or whether they remain obstinately, irritatingly apart.

Losey's *The Romantic Englishwoman* seems very thin on first viewing: a triangular comedy of manners involving a wealthy and successful writer (Michael Caine), his bored wife (Glenda Jackson) and the young man (Helmut Berger) whom she meets in an hotel lift in Baden-Baden and who follows her out to her Weirbyshire home, working with the couple to become a kind of secretary-cum-lodger. This improbable interloper would seem to have sprung from a Plater script, but in fact the film was written by Tom Stoppard and Thomas Wiseman, and based on the latter's novel. The first half is very funny-in a bitchy-gentle style reminiscent of *Accident*-but in the second half Losey gets a touch of the Antonions and has his characters whisked off to France to pursue each other through picturesque Mediterranean scenery. The film is beautiful to watch, and witty to listen to, throughout; but even Losey, over the years, one the political and psychological has come to expect a little more.



Jack Nicholson and Maria Schneider in 'The Passenger'

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Businessman's Diary

U.K. TRADE FAIRS AND EXHIBITIONS

Date	Title	Venue
June 2-6	National Printing Machinery Exbn.	Olympia
June 2-6	National Wire Exhibition	Belle Vue, Manchester
June 9-11	Minicomputer Exhibition	Regent Centre Hotel, W.1
June 9-11	Small Part Production Exhibition	Birmingham
June 10-11	EIA Engineering Exhibition	Southend
June 10-12	Print Fair	Couard Intl. Hdl. W.6
June 11-21	Grosvenor House Antiques Fair	Grosvenor House, W.1
June 11-13	Italian Gifts and Fancy Goods Exhibition	Italian Trade Centre, W.1
June 16-17	Provincial Bookellers' Monthly Fair	Kensington Hotel, W.C.1
June 17-20	Royal Highland Show	Edinburgh
June 17-20	Microforum International Exhibition	West Centre Hotel, W.6
June 22-28	Contract Furnishing and Interior Design	Olympia
June 23-27	Intl. Film Technology Exhibition and Conference	Royal Lancaster Hotel, W.2
June 23-27	Euro. Assn. of Radiology Tech. Exbn. and Cong.	Edinburgh
June 30-July 3	Royal Agricultural Show	Kensington, Warwick.

OVERSEAS TRADE FAIRS AND EXHIBITIONS

Date	Title	Venue
May 28-June 3	Mach. and Equip. for Wood Industries	Hanover
May 29-June 6	Paris Air Show	Paris
June 3-5	Materials Handling Exhibition	Cincinnati
June 3-8	Mechanical Handling Exhibition	Tokyo
June 3-12	International Fair	Barcelona
June 4-7	Furniture Production Exhibition	Cologne
June 6-12	Sewage and Refuse Engineering Exhibition	Munich
June 8-17	Technical Goods Fair	Poznan
June 9-13	Plastics Show of Canada	Toronto
June 10-13	Hospital Equipment Exhibition	Düsseldorf
June 11-22	International Fair	Lisbon
June 12-22	Laboratory Equipment and Medical Aids Exbn.	Zagreb
June 17-20	Intl. TV, World Wide Convention	Tokyo
June 17-21	Brit. Export Centre: Camlins and Leisure Exbn.	Melbourne
June 17-21	International Education Exhibition	Paris
June 17-26	European Machine Tool Exhibition	Maribor
June 18-23	International Art Fair	Basle
June 19-23	International Pharmaceutics Exhibition	Basle
June 20-24	Music Industry Trade Show	Chicago
June 20-25	Building Materials and Pre-Fabrication Fair	Tehran
June 23-27	International Packaging Exhibition	Brno
June 24-27	Opto-Electronic Systems Exhibition	Munich
June 24-28	Irish Cleaning and Maintenance Exhibition	Dublin

BUSINESS AND MANAGEMENT CONFERENCES

Date	Title	Venue
Current	Lond. Grad. Bus. Sch. Corporate Fin. (cl. June 23)	Sussex Place, N.W.1
To-day	Financial Times: Flight International and Air et Cosmos: World Aerospace and Air Defence Industries (cl. May 28)	Paris
To-day	PCL: App. Microcomputer Prog. (cl. May 30)	115, New Cavendish St. W.1
May 28	Eng. Market Res. Selling Eng. Products	Manchester Bus. School
May 28-30	Guardian Bus. Serv.: Effective Interviewing	21, John Street, W.C.1
May 29-30	IPM: Personnel Statistics	Kingsley Hotel, W.C.1
June 1	W. D. Scott and Co.: Job Evaluation	43, Portman Square, W.1
June 2-4	Asn. Cert. Accants: Effective Internal Auditing	43, Portman Square, W.1
June 2-6	PE Con. Group: Work Study Appreciation	43, Portman Square, W.1
June 2-6	MIT/TV: World Wide Convention	43, Portman Square, W.1
June 2-7	Asn. Man. Coll. Management Development	43, Portman Square, W.1
June 3-5	Telecommunications '75 Conf. and Exbn.	43, Portman Square, W.1
June 4	Inst. of Metallurgists: Materials Selection	43, Portman Square, W.1
June 4	Staniland Hall: Manpower Costs to 1980	43, Portman Square, W.1
June 4-10	HTS Man. Centre: Interviewing Skills	43, Portman Square, W.1
June 8-11	SRI-U.K.: Decision Analysis	43, Portman Square, W.1
June 8-12	BOB: Special Libraries Assn. Conf.	43, Portman Square, W.1
June 9	Coopers and Lybrand: Implementing Equal Pay	43, Portman Square, W.1
June 9-13	Brunei University: Decision Analysis	43, Portman Square, W.1
June 10	Inst. Works Man.: Health and Safety at Work	43, Portman Square, W.1
June 10-11	Coventry MTC: Industrial Relations	43, Portman Square, W.1
June 10-12	Brit. Waterways Board: Freightways '75 Conf.	43, Portman Square, W.1
June 11	Henley Centre: Britain to 1985	43, Portman Square, W.1
June 11-14	Strategic Man.: Integrated Marketing	43, Portman Square, W.1
June 12	N.E. Admin. Man.: The Effective Executive	43, Portman Square, W.1
June 14	Goldsmiths' Coll.: Oceanography Conference	43, Portman Square, W.1
June 18-20	Financial Times: Direct British Airways	43, Portman Square, W.1
June 19-20	Cathay Pacific Airways and Fairplay: International Shipping Weekly: South East Asia Shipping	43, Portman Square, W.1
June 18-20	Fulmer Res. Inst.: RPD Planning and Design	43, Portman Square, W.1
June 20-28	Bradford Univ.: Marketing and Logistics Planning	43, Portman Square, W.1
June 25	Inst. of Marketing: Management by Commitment	43, Portman Square, W.1
June 26	Chatham House: The International Credit War	43, Portman Square, W.1

WEEK'S FINANCIAL DIARY

The following is a record of the principal business and financial engagements during the week. The Board meetings are mainly for the purpose of considering dividends and official indications are not available whether dividends concerned are interims or finals. The sub-division shown below is based mainly on last year's time-table.

Company	Meeting	Date	Time	Place
British Airways	Board	27/5	10.00	11, Grosvenor Gardens, W.1
British Airways	Board	28/5	10.00	11, Grosvenor Gardens, W.1
British Airways	Board	29/5	10.00	11, Grosvenor Gardens, W.1
British Airways	Board	30/5	10.00	11, Grosvenor Gardens, W.1
British Airways	Board	31/5	10.00	11, Grosvenor Gardens, W.1
British Airways	Board	1/6	10.00	11, Grosvenor Gardens, W.1
British Airways	Board	2/6	10.00	11, Grosvenor Gardens, W.1
British Airways	Board	3/6	10.00	11, Grosvenor Gardens, W.1
British Airways	Board	4/6	10.00	11, Grosvenor Gardens, W.1
British Airways	Board	5/6	10.00	11, Grosvenor Gardens, W.1
British Airways	Board	6/6	10.00	11, Grosvenor Gardens, W.1
British Airways	Board	7/6	10.00	11, Grosvenor Gardens, W.1
British Airways	Board	8/6	10.00	11, Grosvenor Gardens, W.1
British Airways	Board	9/6	10.00	11, Grosvenor Gardens, W.1
British Airways	Board	10/6	10.00	11, Grosvenor Gardens, W.1
British Airways	Board	11/6	10.00	11, Grosvenor Gardens, W.1
British Airways	Board	12/6	10.00	11, Grosvenor Gardens, W.1
British Airways	Board	13/6	10.00	11, Grosvenor Gardens, W.1
British Airways	Board	14/6	10.00	11, Grosvenor Gardens, W.1
British Airways	Board	15/6	10.00	11, Grosvenor Gardens, W.1
British Airways	Board	16/6	10.00	11, Grosvenor Gardens, W.1
British Airways	Board	17/6	10.00	11, Grosvenor Gardens, W.1
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British Airways	Board	8/11	10.00	11, Grosvenor Gardens, W.1
British Airways	Board	9/11	10.00	11, Grosvenor Gardens, W.1

OVERSEAS NEWS

New Portuguese bid to end political impasse

BY JANE BERGEROL

LISBON, May 26.

PORTUGAL'S POLITICAL impasse is at the heart of today's discussions by the Armed Forces Movement's General Assembly. It is the second time in a week that the 240-man military "parliament" has met to hammer out a solution to the power struggle which has been tearing the AFM against the civilian parties since the April elections.

At stake is the formulation of another new role for the AFM, which has already shown its flexibility to events and capacity to adapt its original programme to Portugal's changing revolutionary situation.

An all military Government and an end to the present four-party plus military coalition cabinet, looks increasingly possible. Lisbon newspapers for the first time to-day have widely commented on this "eventuality", many of them from a Communist party viewpoint.

The heart of to-day's debate focuses on the "Armed Forces People's Alliance". Essentially, the military are to review the

possibilities of building strong mass participation in the country's political, economic and social decision-making without using the political parties. This "solid civilian movement" as it is christened in a working document being presented to the Assembly, could be built up from workers' revolutionary councils, currently being set up in factories and workshops in major industrial centres. The councils bypass all the recognised political parties since they have sprung from grass roots work by the extreme revolutionary Left.

An alternative project for the "solid civilian movement" is the committees for the defence of the revolution. These are being proposed by the Communist Party and would effectively function as Communist Party-manipulated but theoretically popular committees.

Brigadier Otelo Saraiva de Carvalho, chief of the military security forces and an outspoken believer in the first model of revolutionary councils, summed the situation up this morning as he entered the General Assembly. "We must take a final decision. Either we really

Smith gives conference ultimatum to the ANC

By Tony Hawkins

SALISBURY, May 26.

IN A HARDLINE speech to-day, Rhodesian Prime Minister Ian Smith delivered an ultimatum to the African National Congress to "agree to hold a constitutional conference or say that it is off and give reasons".

If it is the latter, said Mr. Smith, his "Government will then turn to other groups of Africans who have indicated a desire to talk." Rhodesia had prompted the spirit of détente and done everything expected of her, but the ANC had used delaying tactics. "I am tired of being messed around," Mr. Smith said.

Opening the annual congress of the Local Government Association at Inyanga to-day, Mr. Smith launched sharp attacks upon the ANC and the Press. Making it clear that he would reject any British initiative for a conference in Rhodesia, Mr. Smith said that "the present détente exercise was instigated for one reason - to hold a conference in Rhodesia, for Rhodesians, by Rhodesians, in order to settle our constitutional dispute." Mr. Smith also rejected the argument that the intensification of sanctions - created by the closure of the Mozambique ports next month - would bring Rhodesia to its knees.

Mr. Smith's statement was promptly attacked by the ANC and by a former federal Prime Minister, Sir Roy Welensky in a trenchant speech. Sir Roy said that Mr. Smith was "absolutely and utterly wrong" to have issued such an ultimatum to the ANC. "We will not accept the argument of treachery," he said, adding that he shared the Prime Minister's concern over the behaviour of certain ANC leaders, but it was wrong to say that there was no chance of success at this moment in time. "The ANC accused Mr. Smith of distorting the situation. It repeated that it will resume talks when the Lancaster House talks are implemented," warning Mr. Smith that there were no other Africans with whom he could negotiate.

Students and police clash in Nairobi

By John Worrall

NAIROBI, May 26.

SHOTS were fired and scores of students arrested in four hours of violence to-day at Nairobi University. Tear gas and batons were used by riot police to break up student meetings and the university campus was cordoned off.

A member of the university staff said that the cause of the riot was the arrest of two students in another disturbance on the campus on Saturday. Nairobi University has been in a state of high tension since the assassination earlier this year of populist MP Mr. J. M. Kariki, who many radical students regarded as their champion. Last year the university was closed for some five months because of unrest there.

'STARVATION' IN ERITREA

GENEVA, May 26.

THOUSANDS OF people are threatened with death by starvation in the drought-ridden Ethiopian province of Eritrea because the Government is preventing relief supplies entering the region, international church aid officials said here to-day.

Almost no food had been allowed into Eritrea, where secessionist rebels have been fighting Government forces, since the end of January, they said. The officials said that the Government was still hoping that the Ethiopian Government would agree to their aid being allowed in to the province.

Bank of England director advises Japan to reflate

BY CHARLES SMITH, FAR EAST EDITOR

TOKYO, May 26.

AN IMPLIED warning to Japan to reflate its economy and thus enable weaker countries to increase their exports was delivered to-day by Mr. C. W. McMahon, executive director of the Bank of England at an officially sponsored Anglo-Japanese economic seminar.

Mr. McMahon avoided a direct reference to Japan and made it very plain that he was not stating any bilateral grievances arising out of the U.K.-Japan visible trade deficit. He said, however, that the smaller member countries of the OECD and non-OECD producing developing countries were facing very serious balance of payments problems which would get worse if major OECD countries did not take steps to reflate.

The delay in the launching of reflationary policies in Japan, which is now a subject of criticism from inside Japan itself, has led to a fall in Japanese imports in the past few months and to sharply increasing

Kuwaiti leader in Paris arms talks

BY RUPERT CORNWELL

PARIS, May 26.

FRANCE'S ECONOMIC and diplomatic ties with the oil-producing countries will be strengthened further by the two-day official visit of Sheikh Sabah al-Salem-Sabah, the Emir of Kuwait, which started this afternoon.

That both sides attach great importance to the visit is not in question. The Emir was greeted on arrival by President Giscard d'Estaing, and is accompanied by a strong delegation which includes his Finance, Foreign and Defence Ministers.

The most specific discussions are likely to concern arms, and the possibility of further Kuwaiti capital investment in France. French arms salesmen have already won \$300m. worth of orders and are well in line to do escaping any new oil embargo by Kuwait, should the Middle East ambition to build up his country's

Print union calls strike

BY GILES MERRITT

PARIS, May 26.

THERE WILL be no daily newspapers in France to-morrow, following a 24-hour strike call by the country's chief print union. But, ironically, there may be copies available in Paris of just one paper, the "Parisien Libere".

The centre of the row responsible for the French Press being strike-bound for the second time in six weeks.

Belgian printers have so far refused to heed the French CGT union's demands that they support the strike begun three weeks ago by printers at "Le Parisien Libere" and the rest. But the paper has been producing the newspaper. Although the tabloid's average daily readership of 1.6m. has been slashed, copies

Greek and Turkish PMs to meet in Brussels

BY OUR OWN CORRESPONDENT

ATHENS, May 26.

GREEK PREMIER Constantine Karamanlis will meet Turkish Prime Minister Suleyman Demirel during the Nato summit conference in Brussels - thus paving the way for a possible solution of the disputes which have brought the two neighbouring countries close to war.

The Government spokesman said to-day that the decision to accept a Turkish proposal on the meeting was taken after the Government weighed its usefulness. The exact date of the meeting will

EEC farm Ministers in fruit talks

BY ROBIN REEVES

LUXEMBOURG, May 26.

THE EEC Council of Ministers was meeting here to-day to discuss Italian demands for improved EEC support measures for its citrus and other fruit and vegetable industries - as the price for its agreeing to more liberal treatment for Common Market imports from the Mediterranean region.

The Community needs to be able to improve its agricultural trade concessions in order to push ahead with negotiations on a trade pact with the Maghreb countries, and so burying the row caused by its signing of a preferential trade agreement with Israel. Originally, the two sets of negotiations were supposed to run in parallel, to demonstrate the EEC's neutrality in the Middle East conflict. But negotiations with Israel were completed last December and the deal signed formally earlier this year.

Hope for kidnapped students

DAR ES SALAAM, May 26.

THE UNITED STATES Ambassador to Tanzania, Mr. Beverly Carter, said to-night that he was hopeful that three kidnapped American students would be freed unharmed despite the Tanzanian Government's rejection of the kidnappers' demands of a joint letter from the kidnappers to the Tanzanian Government to release the students.

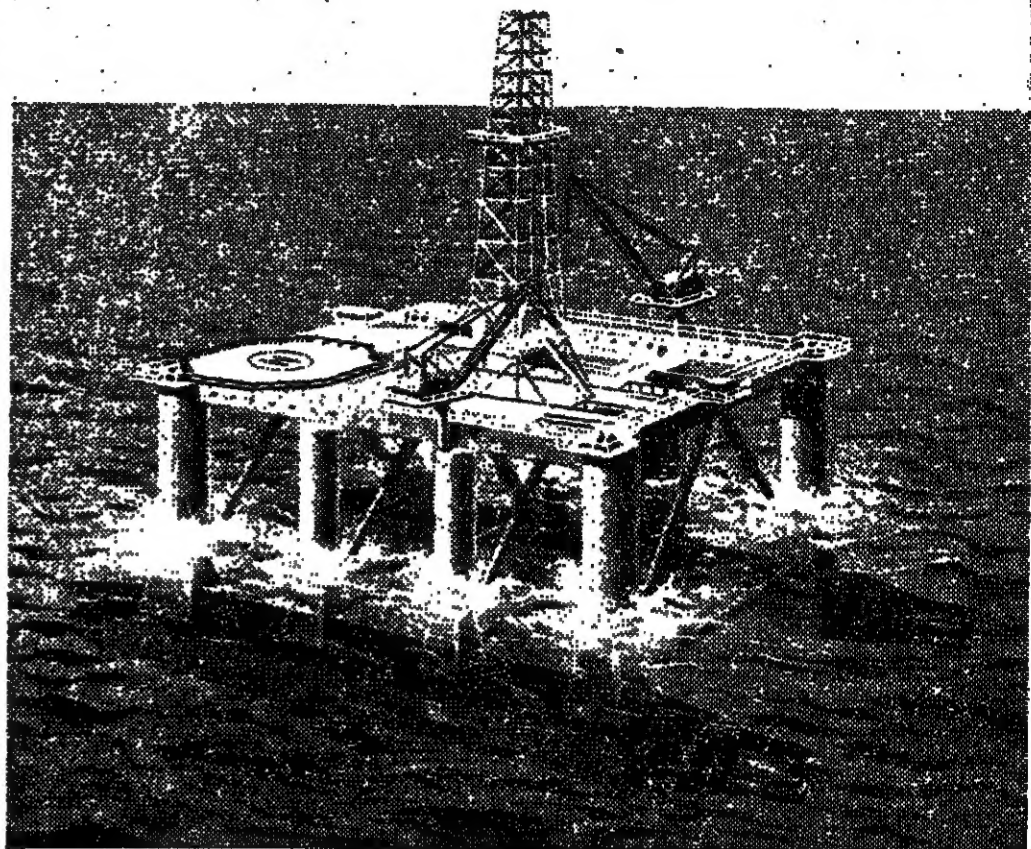
The students were abducted from a chimpanzee research centre on the Tanzanian shore of Lake Tanganyika by 40 heavily armed men from the guerrilla army of the self-styled People's Revolutionary Party (PRP).

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CHEMICAL BANK

International business: When needs are financial, the reaction is Chemical.

Lebanon reports second border clash with Israel

SIDON, LEBANON, May 26.

LEBANESE and Israeli artillery were both in action again to-day near the border village of Aita Ash-Shaab, scene of a battle yesterday in which Israeli planes raided Lebanon for the first time in nearly six months.

A military spokesman said a 100-man Israeli force entered the outskirts of the village at 9 a.m. and came under Lebanese artillery fire. "Enemy artillery returned the fire, aiming at one of our positions, to cover the withdrawal of the enemy force to occupied territory," he added. "There were no Lebanese casualties."

Local residents said the outskirts of the village came under intermittent shelling for half an hour, damaging plantations and hitting two houses. But they said no planes were involved in the engagement. There was

Suez dues rise by 90%

BY MICHAEL TINGAY

CAIRO, May 26.

THE NEW dues for shipping through the Suez Canal announced over the weekend mean a substantial increase in charges, although they are lower than had been expected by some observers in the shipping world.

At a Press conference in Cairo, Mr. Mahabub, chairman of the Suez Canal Authority, made it clear that after consultation with a group of international consultants the charges had been fixed using the oil tankers as the basis of the new category of dues.

The Authority has fixed rates for 1,611 SDR units for each Suez SCNT. Sterling was in 1967 at Canal net ton (SCNT) for oil tankers, 172 SDR, compared with an official rate in May, 1975, of large vessels, and 1,388 SDR for tankers.

U.S.-Europe monetary rift feared

BY PAUL LEWIS, U.S. EDITOR

WASHINGTON, May 26.

THE Ford Administration warned this week-end of a new monetary rift between Europe and the U.S. when Finance Ministers met in Paris early next month in an effort to complete the first stage of their monetary reform plans.

Mr. Jack Bennett, the U.S. Treasury Under-Secretary for Monetary Affairs, told a Press conference here that he was pessimistic about the prospects of agreement at the forthcoming Ministerial meeting in Paris on June 10-11.

He cited wide differences of

H. & J. HILL GROUP LTD.

Founders, Dropforgers and Engineers

Increased Profits

Salient points from the circulated statement of the Chairman, Mr. W. C. Sproson, F.C.A.

- The consolidated profit for the year ended 31st December 1974 amounted to £85,800 before taxation (1973: £38,785). Total dividend distribution of 1.875p per share, equivalent of the 25% less income tax paid in earlier years is the maximum permitted.
- The first quarter of the year was adversely affected by the power crisis, with only the Foundry Division able to produce on five days per week. The buoyant order books of this and the Drop Forging Division continued throughout the year.
- The current order book of the Drop Forging Division is still buoyant but there has been a reduction in the level of orders received from the home market for hydraulic attachments. We are however endeavouring to alleviate this by increasing our export effort.

WILLENHALL - STAFFORDSHIRE

"Thanks to some very sturdy performances..."

Extracts from the Chairman's Statement:
Mr. Robin G. Martin reports—

Group Results

1974 was not an easy year for the Group. It started inauspiciously with the three-day week, followed by a major downturn in a number of markets, notably those of roads, housing and property. None of these conditions was helped by a Government which, at its inception, considered that, in spite of price controls and increasing inflation, industry could afford to divert more of its cash flow to the State in the form of higher taxes paid earlier. Happily, in subsequent budgets the situation was to some extent redressed.

Thanks to some very sturdy performances by all the main divisions we came through with pre-tax profits increased to £17,779,000.

Strategic Considerations

We aim to play our part in the growing overseas markets but these are no substitute for our basic U.K. business which can ride the downturns successfully. Therefore, while I visualise a greater overseas contribution to our profits in the future, I also see our U.K. business prospering and developing under a management of considerable ability and experience.

Finance

Your Board felt it was in the best interests of shareholders to commission a revaluation of the Group's interests in land, minerals and buildings in the British Isles. The valuation takes into account the relatively depressed state of the British property and mineral reserve market at 31st December 1974, and it is our belief that the figures now incorporated in the accounts, showing a surplus of £20,007,000, provide scope for future appreciation. Goodwill, which at the end of 1973 amounted to £22,773,000, has been eliminated from the accounts.

Your Board is currently placing much emphasis on maximising the Group's financial strength because extra money is needed to finance our policy of expansion both in the U.K. and in those world markets where our skills can be applied for the benefit of all involved with Tarmac. We have taken the opportunity provided by improved stock market conditions to invite shareholders to subscribe for additional share capital through a rights issue.

Roads

I think it is beginning to dawn on the Government that there is no easy way to ponder to the self-delusion of those people who continue to believe that we do not want more roads and that a major shift of freight from road to rail can be achieved.

Latest forecasts suggest that the 14 million cars in use today will rise to about 18 million by 1985 and 22 million by 1995. And why not? The car, in spite of the increased cost of petrol, remains the most convenient method of transport, and more and more people who do not own one will eventually do so. As to shifting freight from road to rail, the facts are that in the U.K. 2,000 million tonnes of goods are transported per annum, of which 1,700 million tonnes go by road and only 175 million are transported by rail, the rest by coastal shipping and canal. Even if the freight carried by the railways were increased by 50 per cent it would reduce total road traffic by less than 2 per cent and that reduction would be offset by normal growth in six months.

In today's economic climate there is clearly a need to cut Government expenditure. Governments, however, usually confuse expenditure with investment and, if they were to think consistently, they would realise that the cry for greater investment in industry could be directed equally at themselves in the case of investment in roads.

Governments continue to spend vast sums of money on the nationalised industries, including the railways, and even commence to subsidise a new range of businesses, and co-operatives, whose viability at best is doubtful. Employment in these industries is



preserved for a time, to be sure, but when the lack of demand hits our roadstone business, it is we who have to cease employing many valuable people, managers and operators alike, because of a lack of investment in roads. Surely, in the name of employment and cost benefit, investment to improve our inadequate road system should have no less a priority than expenditure on those numerous and expensive enterprises which Governments seem obsessed to support without any certainty of future viability.

The Industry Bill

Apologists for the Industry Bill say that British Industry cannot go on as it is and that something must change. However, if the performance of industry, especially in the investment field, leaves something to be desired, it may well be made worse by a new dose of State intervention involving the wide disclosure of industry's plans. The Government spends a great deal but shows no good example when it invests. Its priorities are questionable and it imposes lengthy delays on the investment plans of others. It might well spend time on improving the investment climate by acting against the present rate of inflation. For example, what sort of export investment can be planned by private industry when the rate of inflation of some of our European competitors is half that of our own? The Industry Bill appears to have no relevance at all to preventing inflation.

We in the Construction industry have a special grievance. We are used as the regulator for the economy. Deflationary measures follow inflationary ones with monotonous regularity and, when Government investment in construction is high, we gear

ourselves up to cope with it, only to have to change direction rapidly when the balance of payments is adverse and investment in roads, buildings, and civil engineering is cut in accordance with Government priorities at the time.

If Planning Agreements as proposed by the Industry Bill were to provide a meaningful dialogue between the Construction industry and the Government, I should have more confidence in the Bill itself.

The Common Market

A crucial decision has to be made on June 5th. If at that time we were to choose to leave the European Economic Community we should be turning our backs upon an economic association with a number of compatible countries each wedded to the concept of a free market economy with free trade unions. I believe we should then move inevitably into the type of planned economy practised by the Eastern European countries. In our case it may well be a siege economy with import controls and the like backed by powers of Government direction known only in wartime. In short the State would encroach further upon the freedom of everyone and our relative standard of living would decline still further.

If we remain in the Community we have no easy path either. We are associated with countries whose industrial investment and productivity are for the most part superior to our own. To compete with them we shall have to match their performances. Yet in spite of the enormous task which will face us, the challenge is one which could at least bring out in us that response which is the tradition of the British people. On June 5th we can give ourselves the opportunity of meeting that challenge and I am sure we should take it.

Future Prospects

We shall try and improve upon 1974 in the coming year but the task will not be easy. However, if the trend continues, we would expect at least to maintain the total gross rate of our dividend on the share capital as increased by the rights issue.

There is no dearth of ideas or management in the Group and I have no doubt that, given a lessening of inflation, considerable real growth will result over a period of years from the sound base upon which we are working today.

Employees

I know that shareholders would like me to express our sincere thanks to all employees for the unremitting efforts they have brought to bear on the many problems which faced us in 1974.

The Year in Brief		1974 £'000	1973 £'000
Turnover		322,642	252,820
Profit before taxation		17,779	16,343
Profit after taxation		9,354	8,563
Capital expenditure		15,953	20,557
Depreciation		7,691	6,845
Assets employed at 31st December		99,933	86,764
Earnings per ordinary share		21.2p	21.1p
Dividends per ordinary share		7.345p	6.76725p

Analysis of Group Results.

	1974		1973	
	Turnover £'000	Profit before Tax £'000	Turnover £'000	Profit before tax £'000
By division				
Roadstone	124,666	8,544	103,320	8,033
Construction	104,225	3,154	79,569	2,233
Housing	26,840	3,033	21,042	1,311
Properties	359	(644)	1,756	510
Bitumen products	56,287	3,153	39,449	2,835
Other activities	10,265	439	7,584	356
Total	322,642	17,779	252,820	16,343

The turnover and profits of certain United Kingdom companies include amounts for contract work carried out in the Middle East and elsewhere overseas.

Copies of the Chairman's statement with the 1974 Report and Accounts are available from:
The Registrar, Tarmac Limited,
Ettingshall, Wolverhampton WV4 6JP. Telephone 0902-41101 - Ext. 263.

Tarmac

LABOUR NEWS

TUC calls for State newsprint subsidy

By Roy Rogers, Labour Correspondent

A NATIONAL Press Finance Committee, which has been set up to consider the possibility of a State subsidy for newsprint, has today called for a new newsprint subsidy and a scheme for redistributing advertising revenue are the main TUC recommendations to the Royal Commission on the Press.

In written evidence submitted to the Commission to-day the TUC suggests 50 per cent trade union-elected membership of a supervisory board of the proposed NPF and similar levels of worker participation on proposed supervisory boards for each newspaper.

The main function of the NPF would be to encourage the growth of new publications, though the TUC says there is no reason why in time it should not own all newspaper printing plant in the country by leasing new plant to national newspapers at their existing plant wears out. Although the NPF would represent a public sector stake in the printing industry the TUC emphasises in its evidence that this State stake would be confined to the printing industry and not extended into newspaper publishing.

Explaining the reasoning be-

hind this proposal the TUC declares that freedom of the Press and diversity can only be fostered if the actual publishing function of the Press is distinguished from the commercial considerations which at present militate against a diverse Press reflecting all shades of national opinion.

In addition to employee representation on the supervisory Board of the MPPC, the TUC also suggests supervisory Boards or trusts for each newspaper. The Commission is urged to obtain the initial reaction of both sides to such a scheme having regard to the need for the editor, once appointed by the supervisory Board, to have day-to-day discretion over the contents of the paper.

A call for statutory regulation of the respective proportions of editorial and advertising material in newspapers or periodicals is included in the TUC submission as is a call for the Commission to examine how the Press can improve the U.K. image abroad.

Biased reporting of industrial disputes would, says the TUC, leave the "neutral" reader with an image of Britain "perhaps somewhat different from reality." While some people at home could perhaps discount the "gloss" which newspapers put on the facts of a situation, this was not true of foreign readers.

The TUC also favours the establishment of a Communications Council to keep the operation, development and interrelation of all the mass media under permanent review and to make its findings publicly available. The existing Press Council and the complaints procedures of the BBC and Independent Broadcasting Authority would become sub-committees of the Communications Council.

Meanwhile concern at the growing concentration in the newspaper industry—eighteen control 90 per cent of British newspapers—is behind a TUC suggestion that the Fair Trading Act be amended to give the Monopolies Commission power to examine all newspaper mergers, regardless of the circulation figures.

In addition the TUC expresses the hope that the Commission will make recommendations for any necessary changes to the Monopolies Commission or otherwise, to look at the broader issues involved in the concentration of the Press.

Plessey strike continues

By Our Newcastle Correspondent

ABOUT 1,200 workers at the Plessey Telecommunications factory in Sunderland will resume strike action next Monday after a week's Whit holiday.

The men, members of the Amalgamated Union of Engineering Workers, walked out on Friday after the breakdown of pay talks. AUEW officials maintain that management will not negotiate without placing unacceptable conditions on the talks.

Meanwhile following the breakdown of their pay talks, about 1,100 white-collar workers at Plessey Telecommunications of Beeston, Notts., have decided to work to rule and ban overtime pending an official strike ballot.

Blind people face 'major jobs crisis'

BRITAIN'S blind people are facing a major crisis, with 45 per cent out of work and the jobless total rising, according to the National Federation of the Blind. There are 25,000 blind people of working age in the country, yet only 10,000 of these have jobs, it says.

Dr. Fred Reid, the federation's president, told the annual conference at Hull over the weekend: "Of the 10,000 who are in work the great majority are confined to a very narrow range of job opportunities."

Dr. Reid urged Government action to give more and better jobs to blind people—with the right to work given to all handicapped people by the 1968s. He alleged "widespread discrimination against the physically handicapped people as employees."

Talks to-morrow on stable lads' dispute

By Michael Thompson-Noel in Sandown

HOPES FOR an end to the Newmarket stable lads' strike, now entering its fifth week, may rest on a meeting in London to-morrow between Mr. Sam Hornigale, Newmarket area organiser of the Transport and General Workers' Union, and Lord Leverhulme, senior steward of the Jockey Club.

Until now, the Jockey Club has held aloof from the strike, which is in support of a claim, for a £1.47 addition to the lads' consolidated weekly minimum wage of £33.52.

Since the violence at Newmarket at the beginning of the strike when stable lads' pickets clashed with racegoers during the 2,000 Guinea meeting, the strikers have stuck to peaceful picketing and have enlisted the support of television technicians in blacking out coverage of race meetings.

Unless to-morrow's talks achieve a ceasefire, the next major event will be next week's Jockey Club meeting. The number of lads on strike is said to be between 120 and 220 out of a Newmarket total of around 630.

Mr. Henry Cecil, the trainer of Deerslayer, yesterday's big race winner at Sandown, said 13 of his 36 lads were still on strike.

"It costs about £40 a week to train a horse at Newmarket," said Mr. Cecil. "Owners can't be pushed any further. If we gave in now, owners would switch their horses to other training centres."

"The Government has got to give back enough to racing to help ensure adequate levels of prize money. This is the only way we can afford higher wages."

Textile men offer pay cut

By Our Carlisle Correspondent

WORKERS AT a troubled spinning company offered to cut their pay by £10 a week to save their factory—but the management turned down their gesture.

The 100 workers at Robert Todd and Sons will be almost unanimous in their offer to take lower wages, at a meeting held with Mr. Michael Potts, the company's managing director.

But Mr. Potts turned down the idea as he felt wage cuts could create problems later. But he said he was greatly moved by the workers' gesture.

The workers still determined to save the company, which is trying to secure a £150,000 short-term government loan, have also signed a petition and set it to Industry Secretary, Mr. Anthony Wedgwood Benn.

Mr. Donald Gribbin, senior shop steward at Todd's commented at the meeting: "We have no objection to help to persuade Mr. Benn that our company must be saved. It is as important to Carlisle as British Leyland is to the Midlands. Our workers were even willing to give up some of their pay. We will do anything to keep it."

Last week it was announced that a bank had appointed a receiver to manage the company.

The Liverpool Daily Post and Echo, already hit by the national dispute involving members of the craft printing unions, has been hit by another dispute, over the dismissal of Mr. Bryan Hogan, father of the firm's managing director, for using bad language.

Last night the pickets were trying to persuade other unions to support them.

Saleroom Sotheby's art sale success in Monte Carlo

By Anthony Thornecroft

JUDGING BY the prices at this Sunday night session, Sotheby's first art sale at Monte Carlo will prove a great success. But the articles for disposal are exceptional, being furniture and works of art from two of the most distinguished houses in France—Le Chateau de Versailles, belonging to Baron Guy de Rothschild, and L'Hotel Lambert, the home of L'ile St. Louis of the Baron de Redé.

The total for the first sale was £680,000, about £100,000 higher than even the most optimistic estimate, and since this was the least important session the eventual total could be around £2m. One indication of the strength of the demand was that none of the 106 lots remained unsold.

The first session was devoted to small works of art, gold boxes and the like, and the highest price was about £54,000, over double the estimate, given for a South German late Gothic cup and cover, 18½ inches high. It is believed to have been made in Nuremberg in the early 16th century by Ludwig Krug. The buyer was not named.

Other good prices were £28,000 paid by a Sotheby's dealer for a gold and mother-of-pearl snuff box made in the mid-18th century; £17,500 by S. J. Phillips of London for a Louis XV three-colour gold cane handle; £16,000 by an American dealer for a set of 30 silver dinner plates, made in London around 1720.

The factory, expected to be operating by the end of the year, will have 45,000 square feet manufacturing space and provide 250 jobs.

Stern Group moratorium proposal

FINANCIAL TIMES REPORTER

PROPOSALS FOR A moratorium, to last at least until July 31, 1978, are embodied in a scheme of arrangement drawn up by Mr. Kenneth Cork embracing 66 companies in the Stern Group. Last night Mr. Cork was appointed liquidator of Wilstar Securities, the company which effectively controls the group.

The Court has directed meetings of creditors of the respective companies to be held in London on June 16 and 17.

In an explanatory statement, Mr. Cork points out that although in the past total assets of the scheme companies have been valued at upwards of £200m, there is now considerable doubt as to their current worth and it is by no means certain that the proceeds of sale of such properties will be sufficient to dis-

Another £8.6m. boost for National Savings

By Donald Maclean

NATIONAL SAVINGS continued to attract improved support from investors in April, with preliminary figures for the month showing net receipts of £8.6m., excluding undistributed interest, against a net outflow of £7.9m. in April last year.

Mr. John Austey, who earlier this month succeeded Sir Robert Bellinger as president and chairman of the National Savings Committee, says in his first commentary on the series of monthly figures that the voluntary workers in the National Savings Movement have "been encouraged by the recent assurances of continued support given by Treasury Ministers, and are fully confident of their ability to undertake the financial and social roles prescribed for them."

Almost 5m. men, women and children, he says, are currently saving regularly in the movement's 100,000 groups.

The competitive position of National Savings has recently improved, Mr. Austey points out, with the general easing of interest rates in the money market, and this is reflected in a stronger performance by British Savings Bonds, and by the investment accounts of the savings banks.

Contracts ICL wins Scottish orders

INTERNATIONAL COMPUTERS

has received orders totalling more than £500,000 from two Scottish Regional Councils. Lothian Council has ordered a System 4.72, and Galloway Council a disc-based 2303 computer.

BRITISH STEEL CORPORATION'S tubes division has been awarded a contract worth £250,000 for the supply of tunnel segments to be used in the construction of central area stations of the New Tyne and Wear Metro, which is scheduled for completion in 1979.

NCR has received an order from Barclays Bank for 100 self-service terminals, which will initially be used for cash dispensing. TELEPHONE RENTALS has won a contract worth almost £70,000 for the installation of a FAX switchboard at the Old Bailey Branch of Barclays Bank.

COMPUTER INSTRUMENTATION, Eastleigh, has won a further order, worth almost £250,000, from British Rail for data acquisition system based on CIL's own system 90 430 nanosecond cycle time processor. This is intended for research and development for investigations into track behaviour of trains.

charge fully all the secured creditors. Because of this situation, a large majority of creditors of the scheme companies, secured and unsecured alike, considered during the summer of 1974 that the best solution for the group's problems would be moratorium, so that assets could be realised for the common benefit of all interested, in an orderly manner.

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Read, mark and inwardly digest.



Holt Laundry & Cleaners Limited

51 Bull Street Holt Norfolk Telephone 0263 71 3210 & 3136

GSH/PH

9th October 1974

Mr C.J.P. Green,
11, Vincent Place,
Watton,
Therford,
Norfolk.

COLT INTERNATIONAL LTD.

Dear Mr Green,

Now that I have had time to sort myself out after the traumatic experience of the fire, which occurred in the Tumbler Drying Dept., of the Laundry. I feel that I must put into words the gratitude I feel through your advising me to install the Seefire Automatic Ventilators.

Our object in installing the Ventilators was primarily from a ventilation point of view, and I must admit that very little thought was given to the claims made by your Company that these ventilators assisted in controlling a fire.

The fire in our factory became apparent at about 1.15am on the 26th June, and by this time the flames were through the roof of the Drying Area and reaching a height of about 15ft - 20ft above the roof; the fire therefore had a good hold.

I am pleased to say the Fire Brigade managed to get the fire under control within about 45 minutes.

Cont /...

Rep. Office, 275 King Street, London W1 9SD Rep. London 0800

It is our practice to close the Ventilators each night before leaving the factory, but the Ventilators had sprung open automatically and had prevented the fire spreading laterally. In fact, apart from the area where the heart of the fire was, the only machinery damaged was that which was situated about 10ft the other side of the Drying Bay. An additional advantage of the Ventilators, was that none of the clean linen, which was in our Packing Department adjacent to the burnt out area, was affected by smoke damage.

Both the Fire Officer and myself appreciated that the Ventilators had saved our factory from total destruction, and due to their restricting the area of the fire, we were back in production by 6.00pm the same evening.

I can only repeat that I am very pleased indeed that we did have these Ventilators installed.

Yours sincerely,
HOLT LAUNDRY & CLEANERS LTD.

G.S. Handforth
.....
G.S. Handforth
Managing Director

The financial crisis of the last year - in which £2.7 million was lost in smoke - is likely to exceed £100 million. Of the companies which suffered a bad fire in 1974, only 10% were able to recover. As the letter above testifies, however, this company survived: one of 53 documented cases in which Colt Fire Ventilation was used to control and extinguish fire damage. The same degree of protection can and should be yours. Please read and find out how. Your next reminder could be a fire. Colt International Ltd (Heating, Ventilation and Industrial Access) Ltd, Havant, Hants. Havant 6471 Telex 86219.

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Bread and new potatoes add 5.02 in one month

done in supermarkets and in

The prices paid by 11 shoppers around the country. The shopping, which was a redundant process, was carried out last Tuesday.

World Value of the Pound

(Date)	On market	As	At
	1962	1963	1964
	1965	1966	1967
	1968	1969	1970
	1971	1972	1973
	1974	1975	1976
	1977	1978	1979
	1980	1981	1982
	1983	1984	1985
	1986	1987	1988
	1989	1990	1991
	1992	1993	1994
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	1998	1999	2000
	2001	2002	2003
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	2007	2008	2009
	2010	2011	2012
	2013	2014	2015
	2016	2017	2018
	2019	2020	2021
	2022	2023	2024
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	2103	2104	2105
	2106	2107	2108
	2109	2110	2111
	2112	2113	2114
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	2118	2119	2120
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	2145	2146	2147
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	2154	2155	2156
	2157	2158	2159
	2160	2161	2162
	2163	2164	2165
	2166	2167	2168
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	2202	2203	2204
	2205	2206	2207
	2208	2209	2210
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	2214	2215	2216
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	2235	2236	2237
	2238	2239	2240
	2241	2242	2243
	2244	2245	2246
	2247	2248	2249
	22		

Securities Services Department,
14 Lombard Street,
EC3P 3AH.
27th May. 1975

Another store operator. But he fall in property values now means that it has proved impossible to sell the store on what John Lewis describes as "satisfactory terms."

Instead, John Lewis has presented plans to the local authority which would allow it to continue trading in theinchlev Road

Nov 11 1:50

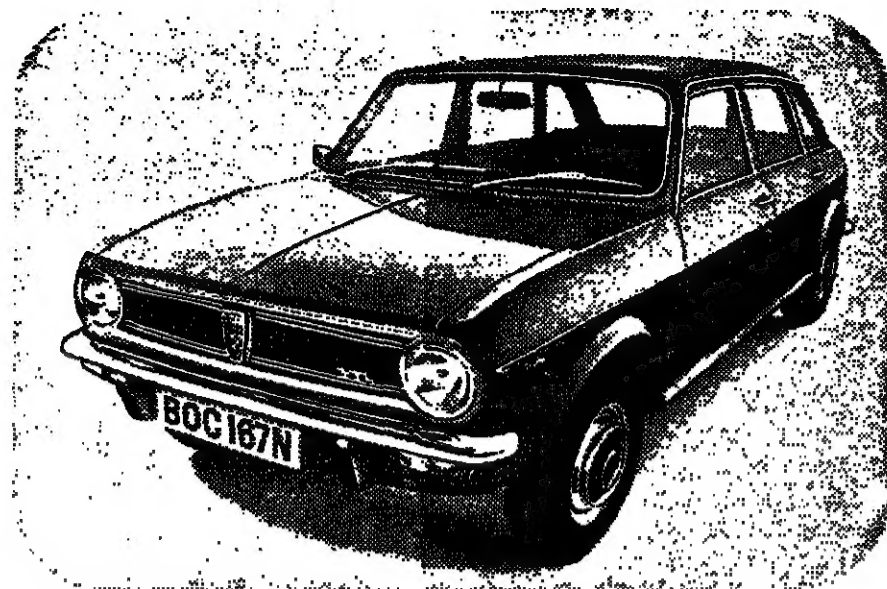
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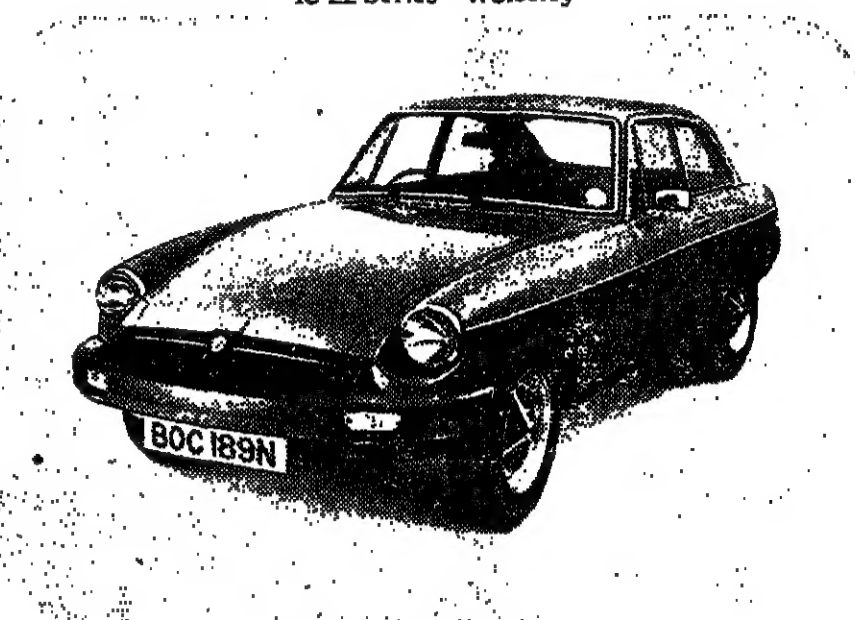
18-22 Series - Wolseley



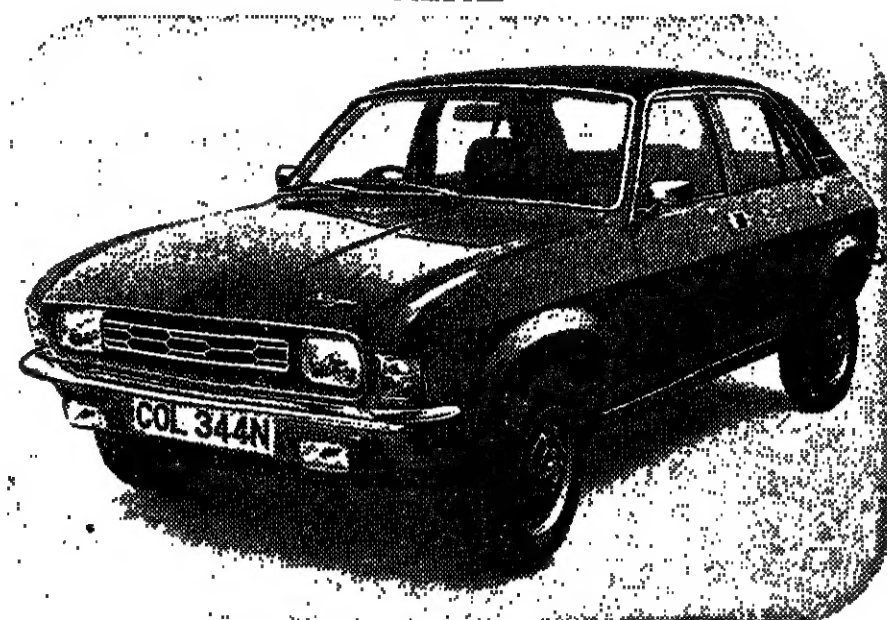
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The Managing Director,
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The Financial Times, 10, Cannon Street, EC4P 4BY.

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We require a SALES MANAGER to be entirely responsible for the U.K. sales operation of our company, based in the North East of England. Applicants should be:

- Aged preferably 35 to 40 years with marketing and selling experience to the marine industry at the highest level.
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Applicants are invited to write, giving personal details to:

Chairman,
Macgregor & Co. (Naval Architects) Ltd.,
50, Salisbury Road,
Hounslow,
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TW4 6JP.

All replies will be treated in strict confidence. Our staff are aware of this advertisement.

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Our client is a leading U.K. Civil Engineering consultancy partnership with contracts at home and overseas.

Reporting to the Senior Partner, the Financial Controller will be responsible for all aspects of finance and supporting systems, together with a range of key secretarial and administrative tasks.

Applicants must be qualified accountants aged around 40; possess sound experience and personal communications skills.

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American organisation seeks U.S. citizen 35-45 at headquarters in Brussels to direct sales promotion, marketing programme. Office established 1962, staff of eight. Must have demonstrated management ability and fluency in one major European language, other languages helpful. Experience working with Government, knowledge of agricultural commodities for feed industry helpful.

Send résumé with photo and earnings history with confidence to Box E.5016, Financial Times, 10, Cannon St., EC4P 4BY.

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Please ring Sylvia Phillips on 629 5747, the

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Ransomes & Rapier Limited, manufacturers of construction equipment for over one hundred years and exporting to most overseas countries, have vacancies in their Export Department for two Territory Managers.

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COMPANY NOTICES

TRAFALGAR FUND S.A.
Registered Office: LUXEMBOURG.
14, rue de la Liberté
Commercial Register: B.252.
The 1974 Annual General Meeting of TRAFALGAR FUND S.A. will be held on 27th May 1975 at 3.30 p.m. in the Grand Hotel de Ville, 14, rue de la Liberté, Luxembourg. The agenda of the meeting is as follows:

1. To hear and accept the reports of the directors and the auditor.
2. To approve the balance sheet and profit and loss account for the year ended 31st December 1974.
3. To elect the directors and the auditor for the year ending 31st December 1975.
4. To elect the members of the supervisory board for the year ending 31st December 1975.
5. To elect the members of the supervisory board for the year ending 31st December 1976.
6. Any other business.

In order to take part in the meeting, shareholders must deposit their shares with the company or the depository, not later than 24 hours before the meeting. The depository is: Banque Générale de Luxembourg S.A., 14, rue de la Liberté, Luxembourg.

Shareholders who are unable to attend the meeting may appoint a proxy to attend and vote on their behalf. The proxy form may be obtained from the company or the depository.

By Order of the Board of Directors,
A. CALAGHAN, Secretary.

ENERGY INTERNATIONAL N.V.
Incorporated in the Netherlands.
The 1974 Annual General Meeting of ENERGY INTERNATIONAL N.V. will be held on 27th May 1975 at 10.00 a.m. in the Grand Hotel de Ville, 14, rue de la Liberté, Luxembourg. The agenda of the meeting is as follows:

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By Order of the Board of Directors,
A. CALAGHAN, Secretary.

Sandy McLachlan reports on the two-pronged scrutiny of cable makers' agreements

Cartels: what Britain approves
Europe may reject

LEADING U.K. manufacturers of heavy electric cables have been in the news twice in recent weeks on the subject of restrictive practices. First, four major suppliers suddenly announced that they had been operating a number of inter-company agreements which had not been registered with the Office of Fair Trading for inspection by the Restrictive Practices Court. Under restrictive practices legislation these agreements automatically became void and have been replaced with a new—registered—agreement which will be considered by the Court in due course. Meanwhile, the companies concerned face the real possibility of being hauled before the Court by the Office of Fair Trading for operating the (now void) unregistered agreements.

The second situation is much less sinister—although, ironically, it was probably directly responsible for the discovery of the first. This was the publicity given to the fact that a group of U.K. companies was involved in an international export cartel. Here the cable manufacturers are but one group of many, since there are at least 100 of these cartels in which British companies are involved either exclusively or in concert with their counterparts from other countries. The Restrictive Practices Act takes the view that these agreements are unlikely to be harmful to U.K. interests and leaves the rest of the world to sort out its own in that respect.

The word "cartel" does not exist in English law, but any restrictive practice which affects the home market is held to be against the public interest unless the RPC can be satisfied that it operates to its benefit.

Before going into the detailed problems this has caused, it is worth looking at the effects of current practice. Since 1956 3,000 agreements have been registered, and the Court has examined 400. Of them, only 40 were pursued in the Court by the parties to the agreement, and so far, only ten have been allowed through the net. There are still something like 150 to be considered, but all the rest have either expired or been abandoned voluntarily because the slim or non-existent chance of getting approval from the Court was judged not to be worth the cost of fighting.

The 1956 Act specifically lays down the arguments which can be put forward to justify agreements, or arrangements. There are seven of these—normally called gateways—which fall into four categories. The first two relate directly to the public interest and cover protection from injury or the confinement of other advantages on the public at large. Seven out of the ten agreements so far passed by the Court have qualified under the confinement of other advantages tag, with the Court ruling that the agreements concerned helped to keep down prices.

The second category relates to protection of business interests and allows companies to justify agreements aimed at protecting their business interests either through countervailing action against anti-competitive actions by third parties or to balance the power of an existing dominant market force. The third group relates to more macro-economic considerations. Here restrictive practices can be justified if they help to prevent or reduce local unemployment, or to increase export earnings. The last category is a sweeper which permits practices ancillary to those justified under the other gateways.

The gateways are quite clear and the fact of only ten successes in 19 years testifies to their narrowness. But legal problems have centred far more on the definition of agreement and even worse, arrangement for the purposes of the Act.

So complicated is this issue that a recent book on consumer protection and competition law (The Fair Trading Act 1973 by James Cunningham) devotes almost 20 pages to problems and interpretations handed down by the court. But the end result has been to cast a pretty wide net. Any agreement of two or more parties where restrictions are accepted is classified as registrable, even if it is not subject to legal enforcement, but arises through what Cunningham calls "the express or overt meeting of minds, and acceptance of restrictions."

The more nebulous word "arrangement" poses even more headaches of definition. However, it can be most simply described for the purposes of the Act as two or more parties regarding themselves as being to some degree under a duty. When the Court does consider either an agreement or an arrangement

and finds that none of the gateway clauses apply, it makes an order prohibiting that agreement and any other future agreements which would have a similar effect. But where companies ignore the Act by not registering, the potential penalties can be even more severe. In the first place any customer who feels he may have been damaged by the existence of the unknown agreement can sue the parties to it for example, this would be an option open to the Post Office in respect of the three cable pacts which affected its purchases of telephone cables from the U.K. suppliers involved. Secondly the Office of Fair Trading can apply to the Court for an order with much wider application covering all agreements rather than just specific and "like effect" agreements.

The situation on export agreements is quite different. Here there is no presumption that the agreement is prima facie against the public interest, and until now references to the Monopolies Commission have been relatively rare. There have been some changes in this respect, partly because the Office of Fair Trading has a bigger staff to cope with administering this part of the Act than did the Department of Trade and Industry which handled the job previously, and partly because there has been a certain reaction against the old nationalistic view that there was no objection to export cartels if they helped the U.K. balance of payments at the expense of others.

The relatively small number of export cartels registered may owe something to the fact that there is no penalty for not registering. But it is also due in part to the fact that many export cartels have had to be wound up because they conflicted with EEC law. Article 85 of the Treaty of Rome bans all cartels or agreements which aim at restraint of trade between member states whether in the form of prevention, restriction or distortion of competition. It makes no specific concession to export cartels but does which is allowable under U.K. law—may be getting close to the U.K. gateways. It may scrutiny in Brussels.

Conflicts may be avoided, but this does mean that companies have to keep a lookout in two directions when entering into cartels or agreements which any type of registrable agreement. Thus, while the cable-makers are having their U.K. form of prevention, restriction or distortion of competition, it Restrictive Practices Court, their makes no specific concession to export cartels but does which is allowable under U.K. law—may be getting close to the U.K. gateways. It may scrutiny in Brussels.

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exempt agreements on the grounds that they improve production of distribution or that they promote technical or economic progress, providing that consumers get a fair share of the benefits and that the undertakings involved do not eliminate competition in substantial areas of the products concerned.

In the first place any customer who feels he may have been damaged by the existence of the unknown agreement can sue the parties to it for example, this would be an option open to the Post Office in respect of the three cable pacts which affected its purchases of telephone cables from the U.K. suppliers involved. Secondly the Office of Fair Trading can apply to the Court for an order with much wider application covering all agreements rather than just specific and "like effect" agreements.

The situation on export agreements is quite different. Here there is no presumption that the agreement is prima facie against the public interest, and until now references to the Monopolies Commission have been relatively rare. There have been some changes in this respect, partly because the Office of Fair Trading has a bigger staff to cope with administering this part of the Act than did the Department of Trade and Industry which handled the job previously, and partly because there has been a certain reaction against the old nationalistic view that there was no objection to export cartels if they helped the U.K. balance of payments at the expense of others.

The relatively small number of export cartels registered may owe something to the fact that there is no penalty for not registering. But it is also due in part to the fact that many export cartels have had to be wound up because they conflicted with EEC law. Article 85 of the Treaty of Rome bans all cartels or agreements which aim at restraint of trade between member states whether in the form of prevention, restriction or distortion of competition. It makes no specific concession to export cartels but does which is allowable under U.K. law—may be getting close to the U.K. gateways. It may scrutiny in Brussels.

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Benn adamant as Healey hits jobs 'myth'

By Elinor Goodman

MR. DENIS Healey, Chancellor of the Exchequer, described as "falsehoods" the arguments of Mr. Anthony Wedgwood Benn about the implications for employment of EEC membership. In the strongest rebuttal by a Cabinet Minister, Mr. Healey said at the weekend that Britain would find it more difficult to solve its problems if foreign scapegoats were sought and if "we try to escape from real life by retreating into a cocoon of myth and fantasy."

Mr. Benn, in his turn, stuck defiantly to his guns. Britain's trading losses with the Market were already damaging the nation's major industries, he said, and the effects of Common Market membership on employment would eventually spread to teachers, local government officials and public servants.

But in Mr. Healey's view, the claim that Britain had lost 500,000 jobs as a result of a deterioration of its manufacturing trade with Western Europe was "surprising" and unworthy of a detailed statistical reply—easy as this would be.

In a statement on Sunday, the Chancellor said there was no necessary correlation between

trade and employment. "If there were, Germany would not now be suffering from high unemployment when she has the biggest balance of payments surplus in the Western World."

It was difficult, he maintained, to see how those who made these claims could say in the same breath that they would like to negotiate a free trade area with the Common Market after leaving it: "in that case our tariffs with the Common Market would continue to be reduced in the same way as they are now."

"That is sensible enough, since for example the whole of the Government's strategy for supporting British Leyland depends on increasing Britain's share of the European car market. A third—something which would be much more difficult if tariff barriers were raised."

Such arguments, Mr. Healey added, made nonsense of the claim that the removal of European trade barriers were the cause of our trade deficit and unemployment. What was particularly damaging about falsehoods was "that in throwing

the blame for all our difficulties on to the Common Market they divert attention from our real problems."

Mr. Benn, however, retaliated by repeating his argument about the impact of membership on jobs abroad.

Reading from a prepared statement, Mr. Benn pointed out that Britain provided jobs, bought its food and paid its national bills with the cash earned selling its goods abroad.

"In the world markets this year, Britain is earning nearly £4bn. net in our trade in manufactures," he said. But in the Common Market, the nation was losing £1bn. net.

"Britain's livelihood depends on us selling our manufactures," he said. "If we remain in the Common Market where we buy so much more than we sell we would not be able to pay our bills and we will gradually put Britain on the dole."

The facts, he declared, were quite clear—Britain's trading losses with the Market were already damaging the nation's major industries.

He added: "Unemployment will not only threaten men and women in the steel, textile, engineering and motor-car industries. As our national income suffers, the blight will spread through shops and offices and even into the public services. A weakened Britain within the Common Market would soon be driven to throw teachers, office workers, secretaries, local government officials and other public servants out of work. "As a nation we cannot afford to stay in the Common Market. We must withdraw and develop our trade where we are already strong and successful—with the world as a whole."

U.K. entry will promote peace, says Peart

MR. FRED PEART, the Agriculture Minister, said that it was not only in Britain's best economic interests to stay in the Common Market, but also in the interests of world peace.

Mr. Peart was speaking on arrival in Luxembourg for the Council of Agricultural Ministers—the last before Britain votes in the referendum. Colleagues in the Council and Commission had found it possible to agree on a common approach to the Common Agricultural Policy, he said.

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Scottish Yes vote 'threat to Assembly'

By Chris Baur, Scottish Correspondent

THE anti-Common Market campaigners opened their major offensive in Scotland yesterday, with a warning from a Scottish Office Minister that if Scotland voted in favour of continued British membership in the referendum it would put new emphasis on the way of devolving significant powers from Westminster to the proposed elected Scottish Assembly.

The warning was issued by Mr. Harry Ewing, the Scottish Minister responsible for devolution, who is himself fighting a stiff battle within the Government to have industrial and economic powers transferred to the Scottish Assembly.

A new White Paper on devolution is expected to be published this summer as a prelude to a Bill before the end of the year. The question of what "teeth" the Scottish Assembly should have has still to be determined by the Cabinet.

Mr. Ewing's view that a pro-Market vote in Scotland could impede the transfer of important powers may carry considerable weight in Scotland where the character of the proposed assembly is still a major political issue than that of EEC membership itself.

Signal

This is the first time that a relationship has been drawn between the two issues. Mr. Ewing said: "A 'Yes' vote in Scotland would make the devolution of power from Westminster much more difficult."

The key message which transferred to an assembly was now being debated by Government on trade and industry, economy and taxation. They were a number of which were directly controlled by the EEC Commission, and in these fields, said Mr. Ewing, "we would no longer be masters in our own house."

He did not agree, he said, that a Scottish "Yes" vote would also be a signal to the Government of diminishing Scottish support for the Scottish National Party which it also campaigned against the Market. "The Government was very much aware of Scotland's role for many years," he said. "It was not a new discovery."

Mr. Ewing said that a "Yes" vote would be "a grave misjudgment."

CIA claim 'sheer desperation'

Financial Times Reporter

THE BRITAIN in Europe organisation yesterday dismissed allegations that the CIA had helped to finance pro-European organisations at the time of the Common Market's inception as "picking up very ancient political flags."

Mr. David Steel, vice-president of Britain in Europe, said that it was a sign of "sheer desperation" in the anti-Market campaign that it should "latch on to 30-year-old allegations about CIA finances of European youth campaigns" and attempt to relate these to the referendum.

The Britain in Europe organisation, he said, would be publishing its finances in full and it would be shown that "not a penny" of its income had been derived from CIA sources.

Mr. Richard Body, the anti-Market Conservative MP for Holland-with-Boston, wrote to the Prime Minister asking him to investigate the allegations about CIA finance for pro-Market organisations, first published in Time Out magazine last week.

Anti-Market case built on fear—Thomson

THE ANTI-MARKET Campaign is based on a neo-fascist lack of national self-confidence," Mr. George Thomson, a European Commissioner, said last night.

"Their case is always built on fear that whatever the rest of the Community does is bound to ruin us. They have no faith in Britain's capacity to compete on equal terms with her trading partners," he said.

Other Community members wanted Britain to stay in—as proved by the way they made a success of the re-negotiations. "It is an insult to suggest that they want Britain for our North Sea oil, which in any case remains a national asset," said Mr. Thomson.

Protest to Belgian envoy

MR. CLIVE JENKINS, general secretary of the Association of Secretaries, Technical and Managerial Staffs, sent a letter to the Belgian ambassador protesting at an "intervention" in the EEC referendum.

Mr. Jenkins claimed that on a visit to Belgium he was "astonished" to see material advocating Britain's continued membership of the EEC displayed in official Belgian State offices.

At the Zeebrugge car ferry terminal he claimed, pro-EEC car stickers were handed out.

No treaty with Rome

SECTARIAN politics are so entrenched in this outpost of the EEC that the Rome Treaty has its own peculiar connotation which has more to do with the Vatican than with Brussels. It is, of course, true that every election here is something of a border poll, a vote for the union with Britain or for unity with the predominantly Roman Catholic Irish Republic to the south, and the June 5 referendum will be no exception. To Ulster nationalists, Dublin rule is akin to Rome rule, and anyone campaigning to stay in the EEC is inevitably suspect in the view of most Northern Ireland Protestants.

The entire electorate of just over 1m. voters, very roughly two-thirds of whom are Protestants, is in any event, a politically sick of the whole election and referendum process. For many Ulster people June 5 will be their seventh visit to the polling stations since the controversial Border poll in March, 1973, just how many will actually take the trouble to express a view on the EEC in ten days' time depends on the extent of the electoral apathy, and all current indications point to a low turnout—and to a "No" vote, though the margin against continued membership may well be smaller than most of the anti-EEC now suggesting.

It is even possible that the Protestant could win this day, at the odds are strongly against it, primarily because most Ulster nationalists see in the referendum another way of telling Dublin that they want nothing to do with the South. The EEC referendum, of course, nothing to do with the Irish Republic, but the very fact that the Government in Dublin has decided to remain a member of the Community, irrespective of the British verdict, is enough to anger the majority of Northern Ireland Protestants to vote the other way.

After all, they will tell you, not Europe is totally dominated by Catholic Parties. (The "Yes" vote is to get grossly over-represented in the EEC, and this is the right to have its own say in the European theatre, to take up the cause of a united Ireland. It matters little if these same legends are as mythical as those once—arguably—attributed to the Pope.)

The SDLP, meanwhile, sees a "No" vote as reinforcing the existing border with the South in view of Dublin's decision to remain in Europe, since the present political frontier would inevitably take on a major economic dimension. This could only be a disaster for a party whose ultimate objective remains the unification of a united Ireland, hence the SDLP advice to its supporters to vote "Yes" on June 5. This is despite the fact that the Party's leader, the Westminster MP Mr. Gerry Pitt, himself crossed the border to campaign publicly against the EEC at the time of the Irish Republic's Common Market referendum in 1972, the result of which, incidentally, was an overwhelming four to one vote in favour of membership.

The SDLP was also a major component in the short-lived power-sharing Ulster Executive with the Labour Party, and which emerged from the Anglo-Irish conference at Sunningdale particularly with the Labour Irish conference at Sunningdale.



The writing on the wall in Belfast.

Left, has come out in favour of Europe. The capsule guidance for anyone confused over this seeming reversal of ideological roles must be to look closely at the basic motivation for the respective decisions, and it has precious little to do with economic considerations.

Northern Ireland Loyalists in the United Ulster Unionist Council (UUUC) have already secured an overall majority in this month's elections for the Constitutional Convention which is to try to find an acceptable political formula for the future administration of the Province, and to them sovereignty is the big issue. They want passionately to maintain the union with Britain, and most of their political leaders believe that continued British membership of the Community will mean a gradual erosion of national sovereignty.

Having so roundly rejected power-sharing and the so-called "Irish dimension" in the Constitutional Convention elections on May 1, the Loyalist community can see no merit in responding this time to the urgings of the discredited power-sharers and this, in the curious way that is Ulster politics, puts Loyalists on the same side of the EEC fence as the extremists in the Provisional IRA and their front supporters in Provisional Sinn Féin who are campaigning for a vote "No" next week.

Just how successful the IRA's anti-Market campaign will be on June 5 will probably depend on what actually happens on the day itself. Certainly the Provos mounted an effective intimidation campaign, but participation by Ulster Catholics in the Constitutional Convention election on May Day, mainly through the physical presence of their activists directly outside polling stations in many regions.

The Provisional dream of an All-Ireland Socialist Republic can hardly be realised by a pro-Market majority in the Province, and the militants are at least being consistent in that they also opposed the EEC membership in the referendum campaign in the Irish Republic. Protestant paramilitary forces, too, are also against continued British membership, although obviously for quite different reasons, yet Mr. William Craig, the former Home Affairs Minister and now leader of the hardline Protestant Vanguard Movement is known to be personally in favour of the EEC. His precise motivation is rather difficult to fathom, but it could well

be connected with his ultimate objective of securing (whether through negotiations or unilaterally) an independent Northern Ireland, and his belief that a defined economic relationship with the Community would be a real plus in making an independent Ulster viable.

Mr. Craig is also well aware that a "No" vote in Northern Ireland would frighten away a lot of potential foreign investors, while his own constituency of East Belfast contains the big Harland and Wolff shipyard whose workforce is solidly Vanguard and whose survival now depends in large measure on the British taxpayer. That could be a good enough reason for Mr. Craig's pro-Market vote: the EEC's Common Agricultural Policy may well sway the issue personally for Mr. Harry Watt, another of the UUUC leaders, since he himself is a farmer of some substance and knows the advantages of the CAP. However, he also knows Ulster Loyalist politics, and his personal preference for Europe will probably remain a referendum booth secret.

The absence of opinion polls in the low-key nature of the referendum campaign to date makes forecasting unreliable, and it is noticeable that Belfast's two morning newspapers are falling over themselves to avoid taking a clear editorial line on the issue. The turnout will almost certainly be low—perhaps of the order of the 58 per cent. turnout in the 1973 Border referendum which went massively in favour of maintaining the union with Britain and against Irish unity.

It could be a repeat performance this time against the EEC, but perhaps the Dublin-based Irish Times got closer to the final outcome when, enterprisingly, it informally polled 78 members of the Constitutional Convention. The result was 40-38 against continued British membership, and most of the 8 "don't know" were likely to come down against. Overall, it looks like an Ulster "No" but it will not be a verdict on the Community as such.

Dominick J. Coyle

Vote decisive for defence says German Minister

By Jonathan Carr

BONN, May 26

IN A SURPRISING intervention in the debate on British membership of the EEC, West German Defence Minister Georg Leber today stressed the importance of a positive vote on June 5 for European defence and the Atlantic alliance.

Speaking to the assembly of the Western European Union (WEU) meeting here, Herr Leber repeated Bonn's belief that U.S. support for Europe had not wavered—but that in return the

European allies had to show themselves to be true alliance partners.

Britain's vote on Community membership, Herr Leber said, would have decisive influence on the weight of that European partnership for a new live outcome would enable Europe to speak with one voice. He compared the referendum in importance with London's original decision to maintain forces on the Continent for a common defence.

'Fear and smear tactics'

PRO-MARKETEERS were last night accused of resorting to the "tactics of fear and smear" in the EEC Referendum campaign.

The accusation came from Mr. Christopher Frere-Smith, the chairman of the Get Britain Out Campaign, in a speech at Reydon.

Mr. Frere-Smith said: "Lord Hailsham's latest pronouncement 'hat anyone who wants a 'No' vote is a pawn of those who want to bring about the destruction of our society, does not come well from one of the Men of Munich who supported appeasement of Hitler before the war."

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SNIA VISCOSA

SOCIETÀ NAZIONALE INDUSTRIA APPLICAZIONI VISCOSA

JOINT STOCK COMPANY - REGISTERED OFFICE IN MILAN - VIA MONTEBELLO, 18

CAPITAL L. 84, 107,750.000 - REGISTERED IN MILAN - NO. 40257

Ordinary Annual General Meeting held on April 30th, 1975

The Ordinary Annual General Meeting of SNIA Viscosa was chaired by Avv. Luigi Santa Maria. In 1974, the company's turnover amounted to L. 372bn., a 27% increase, while the sales figure for the group as a whole was L. 669bn., an increase of 30.1%.

In its report, the Board reviewed the activities of each of the company's divisions. The turnover achieved by the Chemical Fibre Division was affected by the conflicting trends in demand in the first and second halves of the year, although it rose by 13.3% overall. The higher sales figures were not reflected in an increase in quantity, being due to rising prices. The same factors affected the turnover of the Textile Processing Division, which rose by 13.3%. The Chemical Division had a particularly satisfactory year, its turnover—both in value and in quantity—rising by 95.9%. Finally, the Engineering and Industrial Construction Division increased its turnover by 19.8%. This Division, which produces capital equipment, was virtually unaffected by the economic crisis.

Having discussed other aspects of the company's affairs, such as its relations with the unions and scientific research, the Report closed with specific comments. In the course of 1974 it had proved impossible to take full advantage of every opportunity afforded by the market, owing to social tension, the shortage of raw materials, price controls and other factors. On the other hand, the opportunities offered by the market in the first part of the year have been to the advantage of competitors from the rest of Europe. It had proved necessary, therefore, to adopt a flexible approach to production. Output was restricted to avoid accumulating excessive stocks, management policy on pricing and production costing was implemented, and the policy was adopted of waiting for the outcome of the numerous investments already planned.

Finally, the Report discussed individual items in the Balance Sheet for the previous financial year. The year ended with a net profit of L. 4,389 m., after provision for depreciation amounting to L. 27,292 m. The Board recommended the following distribution of net profits: L. 1,281 m. to preference shareholders, a dividend of L. 120 per share, equivalent to 10% of its nominal value; L. 3,035 m. to ordinary shareholders, a dividend of L. 72 or 6% of the nominal value of each share, with the balance being carried forward.

During the Meeting, the Chairman furnished explanations and information on the company's activities. In particular, he said that there were some slight signs of a revival in demand, especially in the acrylic fibre sector. He reported that a methane well in one of SNIA's prospection areas had proved to be productive. He also said that in the first four months of the current year turnover had been 10% down on the same period during the previous year, and announced the formation of a joint Montedison-SNIA financial company to manage textile engineering firms, etc.

Following general discussion, the Meeting unanimously approved the Report, the Balance Sheet, the Profit and Loss Account and the recommended profit distribution. It then re-elected by acclamation directors whose term of office had expired, i.e. Prof. Giovanni Balella, Dr. Renato Berti, Dr. Giorgio Corsi, Ing. Camillo d'Amelio and Dr. Mario Schimberni. Dr. Schimberni was confirmed in his office of managing director.

SNIA

Portals: confidence based on a good order book for essential products.

A Summary of the Statement by the Chairman, Mr. John Sheffield, included in the 1974 Annual Report.

1974 saw further good progress and earnings per share after tax rose 13%.

Direct exports have again increased significantly, from £8.5 million to £13 million and, if one adds indirect exports of bank note and security paper and the trade that is carried out by our overseas companies, the proportion of our total turnover generated by activity overseas amounts to about 60%.

The Water Treatment and Engineering Division—four most of 1974 the principal companies had full order books and achieved their anticipated profits. However, towards the end of the year there was a noticeable downturn in the demand in Western Europe which is, to some extent, offset by orders from OPEC countries.

The Bank Note and Security Paper Division—our three mills at Overton, Bathford and Ryburndale all enjoyed full capacity and excellent production and profit figures during 1974. We go into 1975 with our productive capacity still fully committed. Our main objectives this year are to expand our capacity (we are installing a new paper machine at Overton) and to improve our productivity, so that we remain competitive

in spite of the huge increases in the cost of labour and, to a lesser extent, materials.

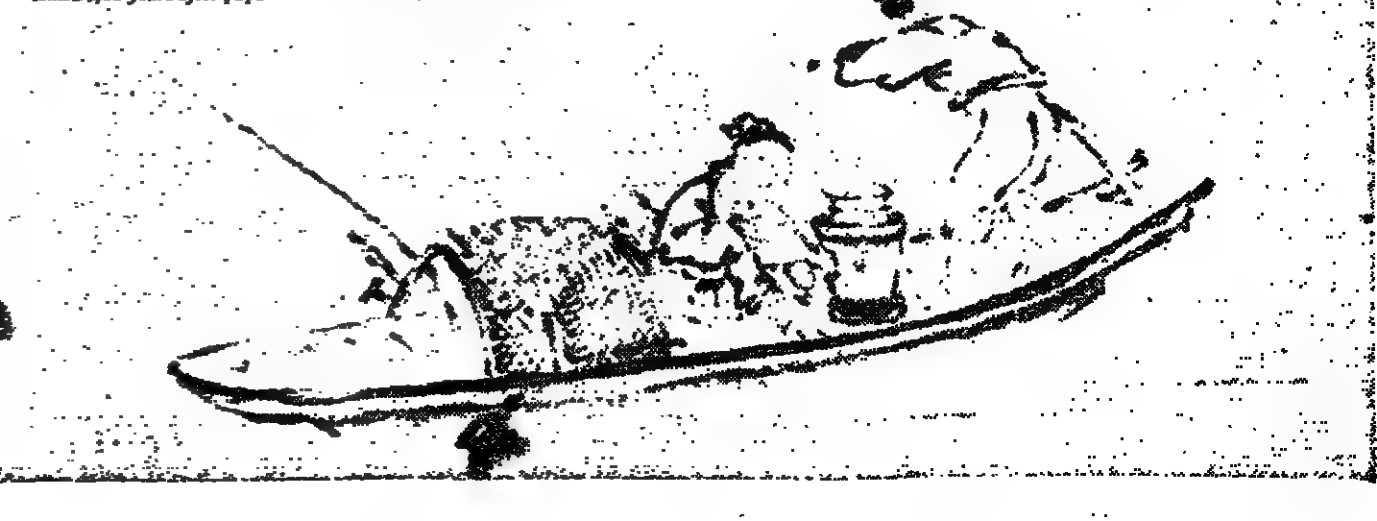
Hyper-inflation and the recession make it difficult to foretell the outcome for our group in 1975. However we anticipate that our profits will at least be greater than in 1974, and remain confident in the longer term that our company will expand and flourish.

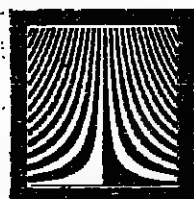
Summary of Results	1974 £'000	1973 £'000
Group Turnover	45,122	37,101
Profit before Tax	4,251	3,887
Profit after Tax		
and Minorities	1,986	1,756
Ordinary Dividends	662	608
1974 7.75p per share gross equivalent (1973 6.889p)		
Earnings per share (basic)	15.01p	13.26p

Portals Holdings Limited

Liquid and Water Treatment Engineers & Security Paper Manufacturers

Part of the cover of our Report & Accounts, reproduced below, is taken from a Chinese paper scroll, with a water scene as its subject matter, painted in the 17th Century—some 1,400 years after paper had been invented in China.





The Technical Page

EDITED BY ARTHUR BENNETT AND TED SCHOTTERS

BANKING

Cash dispenser war in the offing

BARCLAYS HAS ordered 100 account inquiries, place cheque book or account statement terminals. Virtually a "mini-bank," the NCR 770 can be used to bring many banking services right on to the street.

The bank ordered six early production models of the 770 when it was released a year ago. These have been undergoing trials. Delivery of the 100 770s will begin shortly.

Barclays is initially using the 770s for cash dispensing. No decision has yet been taken on the range of services they will ultimately provide, but they are clearly intended as more than an answer to the Lloyds Cashpoint.

Customers issued with an appropriate magnetic striped plastic card can, following the simple instructions displayed by the terminal, carry out not only withdrawals in banknotes, but also make deposits, deal with quickly to follow suit.

CONFERENCES

Discussions on metal finishing

GOLDEN JUBILEE Technical Conference of the Institute of Metal Finishing will be held June 4-6, at the Europa Hotel, London, when some 33 papers are to be presented by world authorities.

The conference deals not only with technical problems but with those affecting the economy of the industry, and with environmental aspects, particularly those of pollution and reclamation. The recent will be largely on quality control, and the desirability of plant investment in the industry will also be addressed.

Details from the Institute 178 Goswell Road, London, EC1V 7DU (01-253 4778).

ELECTRONICS

Linear lamp array

EXTENDED FOR applications where the need is to present an electrical output in linear analogue form in a ten bar light emitting diode display from ITT Components.

Each unit has ten red light emitting bars in a length of about 2.5 cm, the package being ten pin dual-in-line. The devices are end-buttable so that no discontinuities are seen when a number of units are used to form an extended column display.

Drive circuits can be either MOS or TTL. The device is robust and suitable for industrial environments. Further information from Electronic Device Division, ITT Components Group Europe, Brixham Road, Paignton, Devon (0803 50763).

PROCESSES

Tape coater goes on stream

NOW ON stream at 3M's magnetic tape plant at Gorseinon, near Swansea, are two pieces of capital equipment which have been installed as part of a £3m. expansion programme for the company's recording materials division.

One is a 3M-designed, £1.1m. tape coating machine and the other is an automatic cassette assembly machine.

The tape coater is housed in a 31,000 square feet building, constructed and equipped to "clean room" standards.

The tape maker handles the very thin web used for long-playing tapes and applies both oxide and back-surface coatings, or dual-layer formulations such as that used in the latest Classic ferri-chrome cassettes. It can also make two different types of tape (for example, a computer analogue form in a ten bar light emitting diode display from ITT Components).

Tape widths are now controlled to within 0.002 inch, and the machine controls tape "weave" to ± 0.003 inch. Among the Scotch recording tapes made at Gorseinon are 777GP computer tape, broadcast videotape (for both home and overseas), 206 studio mastering tape, a range of low-noise cassettes for hi-fi enthusiasts, and video cassettes.

HANDLING

Sling aids pipelaying

FOR USE on pipeline construction schemes, a heavy-duty (20 tons) ram's horn sling, incorporating renewable friction resistant nylon webbing, has been introduced by Sandem Web Slings Co., Compstall Mills, Cheshire.

A feature is the metal end plates which ensure that the webbing is held at its full width for even distribution with all the threads taking their share of the load. The sling comprises three thicknesses of webbing stitched across the width so that the hands remain together during lifting.

The company will reveal the slings provided the terminal plates are not damaged.

BUILDING TECHNOLOGY

Protected from the sea air

BECAUSE of its constant exposure to sea air, Britain's first "Space Tower" on Blackpool's pleasure beach has gone into service with a coating of Liquid Plastics' "Isoclad" anti-corrosive membrane.

Standing free in a 1,015-tonne concrete foundation, the 158-foot (48.16m) high tower has a doughnut-shaped observation cabin seating 60 people which rotates up and down the slender steel tower at a speed of 220 feet (67m) per minute. Tens of thousands of holidaymakers are expected to make the so-called "space ride" at the rate of 15 trips an hour during the 1975 holiday season.

The 64-foot (19.8m) tower is constructed of cylindrical steel tube sections, rigidly bolted together with flange plates providing a uniform surface for most of its height. It was designed by Intamin AG, Zurich, Switzerland, to withstand hurricane-force winds in excess of 90 miles (145km) per hour.

Liquid Plastics, POB, Preston, Lancs. PR1 4AJ (0772 59731).

Building's services automated

BUILDING automation equipment that gives fast and accurate control and monitoring of the mechanical and electrical services in a building or group of buildings is being installed at a number of sites by Johnson Control Systems, of Leatherhead, Surrey. Johnson JC/30 building automation system is the first such equipment to be built around a specially designed micro-computer working in real time. Its designers assert:

Various configurations already on site represent contracts totalling £2m. The company plans to double this figure during the next 12 months. The system will accept plain English and code and an operator sitting at the control panel can receive and

transmit information whenever a problem occurs or a change in environmental circumstances is required. This two-way transmission of information is carried out around a building complex on a communications loop principle. The loop controller is the computer and the various sensing devices throughout the building are connected into strategically placed panels (called loop remote panels) which perform the encoding and decoding required for the loop transmission.

All data transmission on the loop cable is in digital form and use is made of computer verification techniques such as parity bit checking and repeat signalling to ensure accuracy. The loop cable, including internal circuitry, the loop controller and the loop remote panels are supervised and any malfunction identified to the system operator. Johnson Control Systems, Leatherhead, Surrey, Leatherhead (23) 78111.

Surveying made easy

WIMPEY IS automating land surveying and is already using a suite of programs, written at Hammersmith, which includes routines for the plotting of field data, contouring and road design.

Wimpey's decision to "go it alone" and do the job on a small but powerful Nova computer, resulted from an extensive study of other possibilities. Surveying packages already available proved to have a number of disadvantages: in particular, they were given as major properties of a large main frame and roof.

It is made up from aluminium sheet with a 20 mm core of bonded to it, the opposite side being faced with vapour-proof vinyl-coated aluminium foil. The company says its tests show that as an insulator it is more than twice as effective as typical asbestos sheet with 10 mm plaster board.

Aimed principally at industrial and large housing schemes, the cladding can be fixed in one operation from the outside, eliminating scaffolding inside a building being erected.

Versatile hammer

CAPABLE OF drilling, chiselling, chasing and coring, as well as light demolition jobs, is the T880 rotary hammer introduced by Hilti (Great Britain), Faulkner House, Faulkner Street, Manchester, M1 4DT (061-236 2100). The drill is powered by an 800 W motor, and uses an electro-pneumatic principle to provide 2,800 blows/minute. The machine weighs 17 lbs, and there is almost no recoil—no hand pressure is required for operation.

Tools are changed with a key-lever chuck, and chiselling or drilling action is selected by a lever. The machine will drill wood, brickwork and light gauge steel.

Holes can be drilled from 10 to 120 mm diameter to a maximum depth of 800 mm (with 22 and 32.5 mm diameter drills only). Chisel bits available are pointed, narrow flat, hollow, channel and wide flat, together with a bushing tool and combing chisel.

Cladding is easy to fit

HIGH insulation value of 0.90 watt/square metre/degree Centigrade and up to 90 per cent external heat reflectivity, are given as major properties of a new wall and roof cladding developed by Alean Booth.

It is made up from aluminium sheet with a 20 mm core of bonded to it, the opposite side being faced with vapour-proof vinyl-coated aluminium foil. The company says its tests show that as an insulator it is more than twice as effective as typical asbestos sheet with 10 mm plaster board.

Aimed principally at industrial and large housing schemes, the cladding can be fixed in one operation from the outside, eliminating scaffolding inside a building being erected.

COMPUTING

Easy for a user to maintain

A LIBRARY of 200 program options, entirely free, is offered as a matter of policy with the Philips 300 series of electronic accounting systems, the newest member of which (the 320) is now being shown to potential buyers in Britain.

This 320 is similar to the 310, already launched, but it has in addition a magnetic ledger card (MLC) facility. Philips claims European market leadership in MLC machines, well ahead of both Burroughs and NCR.

Visuals, the machine has clean and simple lines and is so quiet that it can go into any office.

One of the significant points in its favour, particularly for the small company, is the way in which faults are signalled. The equipment is built up in a modular fashion. To each main section corresponds a function light. Should it not perform a given operation the light pattern will immediately show where the defect is. A telephone call to the service engineers indicating what this pattern is will immediately instruct them what component to bring along. This is a major time-saving for both user and supplier.

The decision to supply, free, the program options may—at first sight—seem prodigal. But it is based on the reasoning that it is better to provide a sound and well-planned routine to such jobs as payroll, stock-control, etc., rather than attempting to write

PLANT & MACHINERY SALES

Description	Price	Telephone
Dunford and Elliott Rotary Lough Dryer 47" dia. X 14' Ravensburg Face Plate Latch Model F20-B23	£1,500 P.O.A.	01-253 6000/1 061-339 3221
Herbert De Vries Spiralatic Mill, Soring, Drilling and Milling Machine 431/48 with Datasol Mark III Numeric Control System, 1967. Immaculate condition.	£24,000 +VAT	01-228 6555
Cleaving Type F/2700/168, Single Action, Two Point Suspension 700 Tons Power Press	£60,000 +VAT	01-228 6555
Cleaving Type F/2700/168, Single Action, Two Point Suspension 700 Tons Power Press	£60,000 +VAT	01-228 6555
Liebherr Tower Crane 190C/SH 190 932-1971. Height 82.5m. Free standing Radius 50m. Capacity 34 tons at max. radius 10 tons at 17m	£30,000 +VAT	051-525 4141
Electron Microscope, Siemens Elmiskop Type S48, Plastering Machine, Slightly used.	Offers Complete £750	0423 67265 0384 69113
Wadkin SCD 50m N.C. Mill with Flexowriter. Urgent Purchase and Sale of Reconditioned Rolling Mills, Wire Drawing Plants, Levelling, Stripping and Coil Processing Equipment.	P.O.A.	021-556 0904
Gilmer 6 sp Par Auto Cap. 32mm. Model AS32 1965. Excellent.	£26,000 +VAT	0234 740542
Generator, G.M. Bedford Diesel 70 KVA. As new.	£3,250	01-589 4239
Orlikon open fronted single sp Auto Cap 231. Model F50. 1967. Excellent.	£16,250 -VAT	0234 740542
New Britain 6 sp Bar Auto Cap 1. Model 60 1966 and 62 overhaul and new bearings fitted. A third sp. completely rebuilt.	£12,500 +VAT	0234 740542
1948 No. 10 bar chamber diecaster, trickle feed.	£3,600	01-334 8595
New Michigan 125B Wheel loaders 4 units available now.	£27,500 each	01-246 8614
WICKMAN 1" X 6 Bar Auto 1964. Text etc chart supplied.	£13,500	021-454 1118
Pratt & Whitney 6 sp magazine Auto 1" cap. Model PRC 50/5. 1961. Hardly used. Excellent.	£11,500 +VAT	0234 740542
Fork Lifts. Fully renewed, large selection. 6 months warranty.	P.O.A.	01-560 1717

IF YOU HAVE PLANT AND MACHINERY SURPLUS TO YOUR REQUIREMENTS, AND WOULD LIKE TO ADVERTISE IN THIS COLUMN, PLEASE TELEPHONE MR. FRANCIS PHILLIPS ON 01-236 0108

COMPONENTS

Valve costs simply cut

SUBSTANTIAL cost reductions in the manufacture of electro-hydraulic and solenoid operated valves are being achieved at Magnetic Devices by using other materials, and by re-design of certain parts. In general these cost reductions are enabling Magnetic Devices to hold its prices down and very often an increase of specification results in some cases, such as when particularly corrosive fluids are used, the use of lower cost materials can be overcome by plating.

In one example, a Magnetic Devices gas valve, the original castings for the actuator cylinder, lid and pump have been changed from gun metal to aluminium. This provided a 50 per cent reduction in the cost of the unmachined parts. The aluminium version has received Class 1 approval by the British Gas Corporation. A brass pressing cover has been changed to a gravity casting which can be produced in gun metal or aluminium.

Another change which has led to substantial savings was to alter the through terminals from the oil-filled cylinder unit to the terminal box section of the electro-casting. Two metal cleaved ceramic terminals were previously used and the time and gas required to heat the area to be brazed was considerable. By using P and FE push fit terminals the heating problems were overcome.

Further cost reductions are being studied. The actuator unit could be re-designed using a pressure die casting incorporating the cylinder, pump and relief valve body in one component. This, together with some other changes, will reduce the production cost by 30 per cent of the aluminium version, which itself produced a cost reduction of approximately 20 per cent of the gunmetal cost.

BANCO DI NAPOLI

Founded in 1833

Head Office: NAPLES, Italy

The Annual General Meeting of the General Council of Banco di Napoli was held on April 30, 1975.

The volume of Deposits, Savings Accounts, and Current Accounts at December 31, 1974 amounted to Lire 4,275,743,773,269 which represents an increase of 20.66 per cent over the 1973 figures.

Net profits reached the figure of Lire 3,090,740,183. After distribution, the capital and reserves of Banco di Napoli amount to Lire 65,093,812,958.

This announcement appears as a matter of record only.

حزب المن لوط



Building and Civil Engineering

£30m. Panama deal Wimpey shipyard contract

CEMENTATION International, 32-storey tower block linked to overseas construction wing of Trafalgar House, has begun work on the first stage of a £30m. project in Panama City. Key men will serve these areas, and parking already on site, preparing for an additional 200 cars is for Stage 1—worth about £10m.

It involves development in and around the existing El Panama hotel building. It provides for the addition of a new 320-room wing with roof-top residential suite, 55 cabins grouped around a swimming pool to form a landscaped court, a casino and cocktail lounge, conference rooms, exhibition hall, and terraced gardens from the main dining area and bar, with a two-level shopping arcade beneath, served from the Via Espana.

The second stage, costing about £20m, is dominated by a

Two housing jobs

GEORGE WIMPEY has been awarded a £9m. contract by Cammell Laird Shipbuilders for the completion of the reconstruction of its shipyard at Birkenhead.

The project involves construction of a shipway, a construction hall and associated works. Completion scheduled for mid-1977. The consulting engineers are Babtie Shaw and Morton.

Four factories are to be built by the company on the North West Industrial Estate, Co. Durham for the Peterlee Development Corporation.

Two housing jobs

TWO HOUSING contracts calling for the company's Quikbild Timber Frame system have been awarded to Llewellyn Jones of Eastbourne, Sussex. Total value is £3m.

At Crawley, Sussex, the Borough Council has placed a continuation contract for the second phase of the Broadfield Estate Development. This contract is worth just on £2.4m, and involves 240 dwellings. Work will start in July.

Slough Borough Council has also placed its second order with the company for 44 dwellings at The Mere. This is mainly for two-storey flats and its worth £1m. This job will also start in July.

The company says these latest contracts bring the total value of orders placed for Quikbild housing since the beginning of the year to over £30m.

Unfortunately, the sand drain can produce horizontal surface movement and considerable reduction in the shear strength of the soil.

A Swedish company has developed a different approach which is stated to be capable of draining areas hitherto considered uneconomic as building sites.

Paper sleeve

A ribbed polyethylene strip, 95 mm wide and 3 mm thick, is enclosed in a high wet-strength paper sleeve. Water filters through the paper and down the channels, which provide a total cross sectional area of about 200 square mm, providing drainage equivalent to a 130 mm diameter sand drain. The drain is supplied in 150 metre rolls.

When being driven into the ground a steel sheath protects the drain, but it is much lighter than the pipe used for sand drains. Installing the Geodrain, as it is known, is usually carried out with equipment specially developed by Linden-Alimak, which is a drilling mast mounted on a tractor. This has a driving force of 3 tons and can place the drain to a maximum depth of 12 metres.

Installing Geodrain at an average depth of 7 metres, this equipment can place 1,800 metres in a working day, about a fifth of the time required for sand drains. Geodrain is made by TerraGo AB, Göteborg 15, S-41105 Gothenburg Sweden (031-41 43 18).

Oil terminal and port projects

THE GENERAL Petroleum and Mineral Organisation (PETROMIN) of Saudi Arabia has engaged Rendel Palmer and Tritton as consultants for the development of its marine oil terminal at Jeddah.

A contract for the construction of the facilities has been signed by Petrol Engineering International of Athens and it is estimated that the cost of the first stage will be about \$10m.

Rendel Palmer and Tritton will advise, check designs and supervise the work which involves an oil jetty, approach causeway link with the shore, a navigation channel dredged through a coral reef and pipelines for crude oil carriers up to 100,000 d.w.t.

In Australia, the consulting engineers' affiliate, Rendel and Partners, is to carry out studies

and prepare a master plan for the development of Brisbane's new \$100m. port at Fisherman Islands.

The study will be carried out on a 60 per cent. Australian and 40 per cent. London participation basis by the Rendel group, the London participation including assistance from Planton, consultancy subsidiary of the Port of London Authority, and will cover a wide field of general investigation into the infrastructure and operation of the port.

This will include the economic of all aspects of cargo handling during the move to Fisherman Islands, industries, marketing, and port operations. The master plan is to cover the development of the port for a long time ahead and the study is expected to take six to eight months to complete.

Power units for ore unloaders

GEC Electrical Projects has received an order valued at over \$0.75m. from Clarke Chapman, crane and bridge division, for electrical equipment for two grabbing-type ship ore-unloaders to be installed at the British Steel Corporation's new deep water terminal and stockyard at Hunterston, on the Firth of Clyde.

This new terminal will handle some of the world's largest ships, and the unloaders will be capable of a throughput of 3,000 tonnes per hour making them the largest of their kind in the UK. The unloaded ore will be transported by overland conveyor to the stockyard area, where it will await transport to BSC's Ravenscraig steel-making complex.

The electrical equipment to be provided for each unloader will include 11 kV switchgear, a 2,250 hp Ward Leonard motor-generator set, dc motors ranging from 150 to 945 hp with associated control gear, transformers, ac motors and motor control centres, and the driver's control console. The major items of electrical equipment will be built in GEC factories at Rugby, Kidsgrove, Manchester and Bradford, and the ore-unloaders are expected to be operational in 1978.

Trunk road diversion

THE London-Penzance trunk road, the A303, is to be diverted for one mile about 27 miles east of Exeter.

The £12.9m. contract has been awarded to A. Monk and Co. by Devon County Council. Included with the roadwork is a mile realignment of the River Tavy and construction of a bridge.

North Sea oil plant

TAYLOR WOODROW Construction has been awarded a £250,000 contract for the erection of pipework and mechanical plant at Hartlepool, Cleveland, for Simon Carves.

The plant will form part of the Phillips Norway Group Ekofisk North Sea crude oil treatment and storage facility located on Seal Sands in the Tees estuary and will involve the erection of some 70,000 feet of pipework in diameters up to a maximum of 36 inches.

Big road job for Fairclough

OVER £5m. of work is to be carried out by Sir Lindsay Parkinson and Co. Southern Civil Engineering Division, of Leonard Fairclough, which is to build a dual two-lane road improvement on the A36 Exeter/Leeds trunk road at a cost of £4,915,017 for the South Western Road Construction Unit. Work starts this month and the road runs from the Almondsbury Junction on the M5 to the Southmead roundabout and calls for 10 major structures including two interchanges, five road bridges and three sub-ways.

The same division has a 14 month contract for work at Barrow Heath Scheme, Suffolk reservoir and pumping station for the Anglian Water Authority—Lower Ouse Division—at a cost of £219,471. Consulting engineers are Pick Everard, Keay and Gimson, Leicester.

Looking into the future

A MULTI-NATIONAL study of the construction industry in 23 countries has just been launched by Battelle's laboratories in Columbus Ohio, Frankfurt, and Geneva.

In the three-year study, being jointly supported by a number of companies, the research team will develop both trend and annual forecasts for the residential, non-residential, and non-building sectors of the industry. A brief report will also describe the current situation and problems in the first year—Saudi

INSULATION Foam-fill rules should be respected

FOAM FILLING of cavity walls for heat retention has now aroused such a storm of concern among users, local authorities and the Department of the Environment, that the market is understood to have declined very sharply even for the best-known names in industry.

Department of the Environment recently gave new instructions to town halls about the problem — asking that rules should be softened since failure was rare — and the Agreement Board, whose basic studies provide the guidelines for foam in all, has found it necessary to restate the position.

The Agreement Board—building materials and methods certification agency sponsored by Department of the Environment, held a guidance session in London last week.

Provided the customer has assured himself that the installer and supplier of cavity wall insulation hold Board certificates, and that the work is carried out in accordance with the stipulations in the certificate, there should be no subsequent problems with such insulation, Lord Peddie, Agreement Board chairman, said.

Most of the major suppliers and installers of cavity wall insulating materials in the UK are so certificated, but Lord Peddie warned particularly against the activities of "rogue" operators offering to carry out a cheap job. In one case, where criminal action followed, it was found that the so-called insulating team had been filling the wall cavity with detergent foam.

Pointing out that it was the householder dealing with door-to-door salesmen who was most at risk, simply because most people do not have the necessary technical knowledge to assess properly the situation, Lord Peddie emphasised that the best protection was the Agreement Board Certificate.

Three materials

There are three materials in general use for cavity fill insulation—glass fibre, which can only be installed in batts during the construction of the building; mineral fibre; and urea formaldehyde foam. The last two can be installed in either buildings under construction or existing buildings.

Agreement Board certificates have been issued in respect of suppliers and installers of all three materials.

According to the Board, all three materials, properly formulated and installed, will last the life of the building, and while being permeable to water vapour (that is, moisture can "dry out"), will not normally transmit water by capillary action.

There is no capillary transmission of water in the case of mineral fibre the Board asserts, and although shrinkage cracks in urea foam may transmit moisture, the risk is reduced to negligible proportions if the Agreement Board specifications are followed.

£2m. awards to Rush & Tompkins

TWO CONTRACTS totalling over £2m. have just been won by Rush and Tompkins.

The biggest, worth £1.5m. is for Barclay's Bank at Ashdown Park, Sussex. The work involves extensive alterations to a convent to create a managerial training hostel.

The company has also been awarded a £500,000 contract at Queen's Gardens, London W2, by Vanta Quest. This calls for the construction of the superstructure to 30 luxury flats and maisonettes while retaining the facade of the original building. There will be basement, ground and seven upper floor levels.

Office block at Heathrow

A CONTRACT worth over £1m. has been awarded to Holland, Hannen and Cubitts Construction (London) by the British Airports Authority for an office block at London (Heathrow) Airport.

The four-storey building will offer 3,600 square metres of office space and is part of the programme started by the British Airports Authority for enlarging Terminal 2.

The Authority has also awarded a £388,000 contract to Marryat Jackson Norris for electrical services for the western extension of the terminal at Gatwick Airport.

This contract includes internal and external lighting, power distribution, an automatic fire protection system, illuminated signs and public address equipment.

IN BRIEF

● The London Borough of Southwark has awarded a £390,000 contract to W. J. Simms Sons and Cooke (Southern) for 85 flats and houses. Completion by the end of 1976.

● The Air Cushion Division of Mears Construction in conjunction with its Belgian Associate, Nobels-Peelman, has moved a 185 ton 27.5m diameter tank a distance of over 500m at the Ruken power station near Oudenaarde, Belgium.

● Ward, Ashcroft and Parkman of Liverpool, have been appointed to collaborate with Shell Chemicals (U.K.), at the Carrington chemical complex on the design aspects of extensions and alterations to production plants.

● Contracts totalling over £450,000 have been won by the John Willmott Group. They are for the second phase of Middle School, Pittwick, Beds. (£147,597), for a children's centre at Kempston (£102,662), both for Bedfordshire County Council, and for a day centre for the mentally ill for the London Borough of Camden (£201,000).

● Structural Fireproofers, a subsidiary of Sika Contracts and a member of the SGB Group of Companies, has been awarded a contract valued at almost £1m. for the fireproofing of the National Westminster Bank's new headquarters in the City of London. Currently under construction, the 185 metre high building will comprise 46 floors and when completed, will be the tallest office building in London. This is thought to be the largest ever single contract in the U.K. for structural fire protection. It will involve the coating of structural steelwork and the soffits to all the concrete floors with Mandoite P20, a fireproofing compound which complies with the requirements of B.S. 476.

EUROBANKING.

Citibank/Europe offers a specific and dynamic new dimension in financial services to European business leaders.

Citibank/Europe is a cohesive and coordinated banking system with a uniquely pan-European scope and viewpoint. Composed of the Citibank facilities listed below, it has the flexibility to apply whatever skills and resources the needs of a national or multinational company call for, anywhere in the world those needs exist.

Eurobanking, as we practice it at Citibank/Europe, means strength—the full range of services of one of the world's leading international banks. It means creativity

—bold new ideas and concepts geared to contemporary corporate needs. (Examples: sophisticated loan syndication, our European money transfer system, international corporate cash management programs.) Above all, it means a bank without boundaries, throughout Europe and beyond—extended, around the world, by Citibank's global network of branches, subsidiaries and affiliates.

Eurobanking and Citibank/Europe go together.

FIRST NATIONAL CITY BANK

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The Government's continued reluctance to introduce import controls on textiles has acutely disappointed the U.K. industry which had looked for immediate relief. Rhys David reports

A costly thread of survival

AFTER MANY months of pressure, for measures against cheap imports, the British textile industry was rewarded in Mr. Harold Wilson's much heralded statement in the Commons last Friday with more assurances than action. Though some positive measures may follow the discussions Mr. Harold Lever, Chancellor of the Duchy of Lancaster, is to have with industry representatives, the statement itself has largely confirmed that the Government remains reluctant to introduce import controls even on a selective basis.

For the rest, Mr. Wilson largely went over old ground, repeating known Government policy on the textile industry. The GATT Multi-Fibre Arrangement talks, which the Prime Minister said would offer more protection to textiles than ever before, have been going on since the start of the year. Other statements that the Government would act where evidence of dumping was established, repeat a commitment made many times.

Capacity

Similarly, the comment that the Government did not want to see the loss of viable capacity has been made before, most recently in a textiles debate in the Commons earlier this year. Surprisingly, even the surveillance system, now operating for textiles, is not to be extended to clothing, though this is likely to be one of the first points the industry will now take up.

Effectively the Government has replied to the industry's pleas for immediate action with a package designed essentially to give medium to long-term aid. The provisions of the Industry Act, 1973—already being used to advantage in wool textiles—will be applied to other textile sectors, with clothing likely to be the first on the list. Schemes under this can hardly hope, however, to come into fruition in less than several months, at the very least. Similarly the stockholding scheme suggested by the Prime Minister as a way of maintaining production at maximum levels—only the vaguest details of which appear as yet to have been thought out—is something which might help in the next recession, not this one.

The sketchiness of the Gov-

ernment's proposals undoubtedly owes much to the fact that they were rushed out in response to industry appeals for a reply to the demand for imports to be reduced by 20 per cent. from 1974 levels, made by the British Textile Confederation several months ago.

But, equally, the decision not to accept the industry's own proposals for its salvation does suggest that in both Whitehall and Westminster there remains some doubt as to whether textiles is suffering very much more than other sectors of the economy in the present recession or that, if it is, the situation is bad enough for Britain to risk unilateral action in its support.

Delayed

One thing that has been clear for some months is that the longer the Government delayed short-term action to aid the industry the better was the chance that, on the surface at any rate, the problem would appear to be receding, even though mills would close in the meantime, workers would be thrown out of work, and some parts of the industry might disappear.

The problem has been caused, to some extent, by the continued buoyancy of U.K. demand for textiles at a time when trade in most other developed countries has been greatly reduced. Thus clothing sales last year were only 1 per cent. down on 1973 in volume terms. In the first three months of this year, there was actually a 5 per cent. advance on the same period of 1974. The U.K. industry, particularly up-stream processes like spinning, has been affected, however, because a lot of this demand has been met either by destocking right up to retail level or by imports, which have been diverted to the U.K. from other less buoyant markets, including the U.S.

During the past few months, however, a number of significant trends have emerged which suggest that the imports pressure on the U.K. industry may be relaxing from now on and it was these trends to which Mr. Wilson drew particular attention in his statement. He pointed out that in a number of sectors imports had fallen this year. By volume, the most important indicator, imports of textiles excluding clothing, fell from

118,753 tonnes in January-March 1974 to 98,201 tonnes in the same period of this year. In clothing the January-March 1974 figure was 22,456 tonnes and this year's 20,796 tonnes. Within these categories yarn and thread imports were down from 34,844 tonnes to 31,891 tonnes and fabric from 53,664 tonnes to 41,152; woven cotton

return to higher levels of output and plant utilisation and the possibility of being able to trade more profitably. In ignoring this case, however, the Government may also have been influenced by another trend which has begun to emerge in world textiles. Though it is too early to point to any general revival of de-

mand, at the beginning of the processing chain some stirrings can be observed. Cotton, after reaching a quoted price of 90 U.S. cents per lb in January, 1974, fell back throughout the year to only 48 cents by February of this year. Since then, however, the cotton price has moved to 54 cents—a 17 per cent. increase—on a steadily rising trend. Wool has also risen in price as a result of renewed Japanese buying at the Australian auctions. The Australian Wool Corporation, which has been buying in more than half the wool on offer at a floor price of 250 cents, has been able to bow out and the price has climbed to 35 cents above the floor.

Some of the leading fibre producers have also been making more hopeful noises recently. At the recent Interstoff textiles exhibition in Frankfurt one of the leading German fibres producers reported an upward trend in demand, with acrylic sales likely to improve by 30-40 per cent. in the second quarter compared with the first three months of 1975. Some hardening has also recently been taking place in polyester staple prices around

the world. The better showing of all the fibres—natural and man-made—may simply mean that spinners have begun to exhaust stocks and not that there may be a return to significantly higher overall levels of demand. Nevertheless, in Germany, Japan, and the U.S. and some other less important markets, the feeling would now seem to be that in textiles the bottom of the trough may have been plumbed.

Recession

Britain was the last market to be affected by the textile recession because of the continued high level of retail spending and may well be that it emerges from the trough later than some other main textile consuming nations—a factor which could again present the industry with problems. The fear is that many companies, having managed to hang on through the recession with reductions in their stock levels and manpower, could be bankrupted by any upturn. If raw material prices now begin to rise many companies could find it extremely difficult to replenish their stocks when the upturn reaches Britain; even some of the bigger companies might find it difficult to return to the levels of production suggested by world demand.

This is another major reason why the industry had been hoping for some short-term aid which would have provided it with some protection in the home market during the next six difficult months. But in

BRITAIN'S TEXTILE IMPORTS

	Jan-March, 1975	Jan-March, 1974
	tonnes	£'000
All textile products (ex. clothing)	98,201	166,753
Clothing	20,796	111,009
Raw Materials	84,159	48,370
Cotton	37,150	14,274
Man-Made Fibres	18,726	10,344
Made-up articles	6,584	12,181
Yarn and thread	31,891	34,844
Cotton, unbleached	4,946	5,311
Synthetic fibres	19,224	22,893
All textile fabrics	41,152	53,664
Woven cotton cloth	18,196	31,452
Grey, unbleached	11,497	12,979
Others	6,459	18,453
Man-made fibre cloth	15,671	44,536
Floor-covering, tapestries	6,256	12,986

cloth fell from 29,010 tonnes to 18,196 tonnes.

Although imports have fallen this does not provide, as the Government seems to suggest, a very reliable guide to the state of health of the domestic producers. The textile manufacturers, and in particular the fibres manufacturers, have been running their plants at below 75 per cent. capacity in some cases for several months, more than matching the drop in imports. The only explanation given continued high levels of retail activity is that destocking is still taking place, and according to some manufacturers there is evidence that the process still has some way to go.

Competition

The effect of imports even on a reduced scale is being felt by the U.K. industry in another way. Competition for business remains very keen with the result that U.K. manufacturers have been unable to recoup higher costs over the past year and, as in the case of the fibre producers, are being obliged to trade at a loss. In seeking a 20 per cent. reduction, therefore, the manufacturers were looking for two gains—the chance to

return to higher levels of output and plant utilisation and the possibility of being able to trade more profitably. In ignoring this case, however, the Government may also have been influenced by another trend which has begun to emerge in world textiles. Though it is too early to point to any general revival of demand, at the beginning of the processing chain some stirrings can be observed. Cotton, after reaching a quoted price of 90 U.S. cents per lb in January, 1974, fell back throughout the year to only 48 cents by February of this year. Since then, however, the cotton price has moved to 54 cents—a 17 per cent. increase—on a steadily rising trend. Wool has also risen in price as a result of renewed Japanese buying at the Australian auctions. The Australian Wool Corporation, which has been buying in more than half the wool on offer at a floor price of 250 cents, has been able to bow out and the price has climbed to 35 cents above the floor.

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APPOINTMENTS

Goodyear European planning post

Mr. H. G. Lutman, director, corporate planning for the GOOD YEAR TYRE AND RUBBER COMPANY in Great Britain has been appointed director, corporate planning covering activities throughout Europe. He is based in Brussels.

Mr. Kenneth Sutton-Jones has been appointed managing director of AGA NAVIGATION AID.

Mr. L. E. Wingrove has been appointed MOBIL group secretary in the U.K. in succession to Mr. R. A. Williams who is curtailing his full-time business activities on medical advice.

Mr. Peter Living has been appointed assistant managing director of the automotive products division of MOTOROLA.

Mr. Cyril Harty is to become chairman of GLOBE AND PHOENIX GOLD MINING COMPANY local management committee in Rhodesia.

Mr. E. G. Glenn, secretary and investment manager of the NATIONAL MUTUAL LIFE ASSURANCE SOCIETY is retiring on May 31. He will also retire from the Board.

Mr. W. P. Jackson has been appointed secretary of the Society and of its subsidiary the St. George Assurance Company, and Mr. Alan Pendleton is to be investment manager of the society from June 1.

Mr. J. H. Hamdill has resigned from the Board of BRITISH STEEL CONSTRUCTIONS (BIRMINGHAM).

Mr. E. C. Trinder and Mr. G. W. Matthews have been appointed to the Board of HENRY BATH AND SON.

Mr. M. D. H. Hill has joined CHANDLER HARGREAVES WHITTALL (AVIATION) as assistant director.

Mr. C. P. A. Bertie will be joining BURGE AND CO., stock brokers, as a partner on June 2. He is at present an associated member with J. and A. Scrimgeour.

Mr. Robert J. Clayton technical director, the General Electric Company, will become president of the INSTITUTION OF ELECTRICAL ENGINEERS.

Mr. Claydon will succeed Mr. J. H. Merriman, Board member for technology and senior director, development, Post Office Telecommunications headquarters, as president of the IEE on October 1.

Mr. J. G. Sanger has been appointed financial director of BLYTH GREENE JOURNALS AND CO.

Scandinavian Bank, London, has made the following appointments for its subsidiary in Hong Kong: SCANDINAVIAN FAR EAST, Mr. Martin P. Lee-Warner, a Royal Navy helicopter

director and general manager, Mr. Tommy Bech Pedersen, foreign exchange manager, Mr. Andrew L. I. Posner, manager, Mr. Lee-Warner has also been appointed representative for Scandinavian Bank in Hong Kong.

The London branch of the BANK OF YOKOHAMA opens to-day. Mr. J. F. Hill is chief manager, Mr. H. Yoshida, manager, Mr. Y. Maeda, deputy manager, and Mr. R. D. Sawyer, foreign-exchange manager and chief dealer.

Dr. E. John Cullen, deputy managing director of ROHM AND HAAS (U.K.) since 1971, has been named as the company's new managing director and chief executive. He will take over the appointment on June 1 from Mr. C. B. Pyle, who is returning to the U.S. as marketing manager of the plastics division at the company's headquarters in Philadelphia. Succeeding Dr. Cullen as assistant managing director is Mr. Albert H. Caesar, who will transfer from Philadelphia to take up the appointment.

Mr. T. P. Allen has been appointed chairman of DELTA TUBES, following the resignation of Mr. L. R. Beattie from the Board. Mr. Allen, who has been with Delta since 1968, is a director of the company and its subsidiary the St. George Assurance Company, and Mr. Alan Pendleton is to be investment manager of the society from June 1.

Mr. P. F. A. Nash, Mr. A. P. Perry Lewis and Mr. D. J. Ticker have been appointed directors of R. F. MARTIN EXCHANGE.

Mr. Paul Engstrom has been appointed chief actuary to the EXCESS INSURANCE GROUP with responsibility for all actuarial functions involving life, health, fire and accident.

Oil pollution exercise plan for Clyde

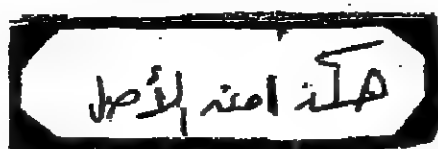
A COMBINED oil pollution and marine casualty exercise will be held by the Department of Trade and the Ministry of Defence (Navy) on Ardrossan in the Firth of Clyde, on May 29.

The exercise, in which the Royal National Lifeboat Institution will participate, will simulate a collision between an oil-tanker and a dry-cargo vessel, leading to an escape of oil from the tanker. A fleet of vessels will be employed to carry out oil dispersal techniques. The dry-cargo ship will be assumed to be sinking and an "explosion" in the tank will lead to a rescue by EAST, Mr. Martin P. Lee-Warner, a Royal Navy helicopter.

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EDITED BY JAMES ENSOR

Could business run cities better?

BY JAMES ENSOR

THE FATE of New York, with its potholed streets, garbage-covered streets, and soaring murder and mugging rate may hold out a nightmare vision of the future facing some of Britain's cities. The familiar cycle of deteriorating public services leading to the emigration of the middle class from the city centres and thus to a further deterioration in revenues and services has not yet been felt in Britain. But the pattern of city centre ghettos, with high immigrant populations, rising crime rates and deteriorating public services is apparent in South London, Glasgow and other British cities.

The problem in New York and other big U.S. cities is compounded by the fact that public service employees, with strong unions and the ability to cause political strikes, have become among the cities' highest paid workers. At the same time, the productivity levels in city service are strikingly lower than in most private businesses. There is little incentive for innovation, mechanisation or the entrepreneurial approach to business problems. Thus cities continue to use out-dated inefficient methods while the problems and costs mount up.

Large numbers of American consultants have studied the problem of the decay of U.S. city life and analysed the organisational efficiency of the city bureaucracy. A study prepared for the U.S. National Commission on Productivity and Work Quality, for instance, describes "A ponderous legal and procedural structure for local government, a modus operandi which will slow the progress of the most routine action and which exacts special penalties for any departure from established practice. It continues: 'Personal selection, employment and termination are typically impeded by rigid and perverse civil service systems.' The same words could be used of Britain.

Mr. Peter Drucker, the celebrated American management

expert, comments that "The elaborate safeguards built to protect the administrative structure within government against the political process... also protect the incumbents in the agencies from the demands of performance." This leads to a situation where entrepreneurial attempts to obtain constructive change carry risks but little reward for senior local government officials, as well as for local politicians. Attempts to make changes inevitably arouse hostility from local interest groups, unions and sometimes voters.

A possible solution, recommended by Mr. John Diebold, the American consultant who has specialised in automation but more recently turned his attention to the problems of cities, and to developing countries, is "Privatisation." This jargon was coined to refer to the introduction of private entrepreneurs into state management.

Mr. Diebold shares with Sir Don Ryder the belief that the ideal mixed economy is one where the sectors are mixed, with private and public concerns competing in each. Mr. Diebold points to the competition between the BBC and ITV companies as an ideal arrangement, with the BBC upholding the public interest criteria but being kept on its toes by the more entrepreneurial and market-oriented independent television contractors.

The same principles can be applied in local government. For instance, New York hospitals which are municipally owned and financed are operated by the independent Health and Hospital Corporation and draw much of their staff from private medical schools and private hospitals. Mental hospitals are contracted out to the State Mental Hygiene Fund, which has in turn appointed private builders to build three new ones.

The relevance of such a mix of private and public bodies is sharply brought home to Britain in comments made by Mr. Mahlon Appar, who heads



Terry Kirk

the local authority consultancy in a maximum of two to four weeks. As Mr. Appar points out, the loss in wasted interest alone can amount to £3m. for every 500 families who are needlessly obliged to wait for better housing.

In New York, it is quite common to sub-contract development work out to private corporations. For instance, the new town on Welfare Island is being managed privately under a contract let by the State Urban Development Corporation. Many of the more routine cleaning and maintenance operations in New York have also been let out to private business, in recognition of the city's inability to manage them with its own recalcitrant work force.

Refuse collection, sewer cleaning, the removal of derelict cars (which is done free by scrap metal merchants instead of costing the city \$50 each) and the maintenance of street lighting are all contracted out to private concerns. A more unusual feature is that the processing of local income-tax returns are contracted out to the First National City Bank.

New York, of course, hardly provides a good example of the successful application of business methods to city management. Indeed, it was the

that the goods and services are obtained at the lowest possible price. But competitive bidding is not feasible for many services and, moreover, is itself subject to corruption through collusive bidding. It has been widely alleged, indeed, that the private refuse collection work in New York has become a breeding ground for the Mafia.

Even where a local government decides that some service should be contracted out to private enterprise, it becomes difficult to prove whether private or public services are more effective. A New York investigation tried to determine whether the Department of Sanitation or private concerns had the lower costs for collection per ton of solid waste. The City Administrator's Office, the City's Environmental Protection Agency and the Independent Citizen Budget Commission each came to different conclusions. Much time and public money was therefore spent on analysing rubbish collection to little benefit.

Often, the accounting systems used by local authorities produce a different view of costs to those which would apply in a commercial concern. For instance, Mr. Appar cites the problem of the tens of thousands of potentially usable houses which have been demolished and not replaced for years because councils do not levy a charge for capital employed in owning empty sites. The argument that it is cheaper to hold cleared property is, he argues, economically self-defeating.

It is by no means evident that the contracting out of a large part of city servicing needs to private companies would solve the urban problems of London or Glasgow — and they clearly have not solved New York's. But as rates rise inexorably and the cost of city management absorbs an ever-growing share of the total aspect of the use of private, an ever more vociferous demand for the efficiency measures and work standards of private industry to be brought into the bidding as a means of assuring

Swiss rules may force Nestlé to switch HQ staff

BY NORRIS WILLATT

THE EVER-TIGHTENING restrictions on granting work permits to foreigners in Switzerland may compel Nestlé to decentralise outside the country some of the operations presently carried on at the company's headquarters in Vevey, on Lake Geneva. Meanwhile, Nestlé is feeling the impact of the policy already, in other ways.

Like most multinational corporations which are based in Switzerland, both domestic and foreign, Nestlé makes it a regular policy to rotate executives and other personnel between the parent concern and its many allied companies, as it prefers to describe its foreign affiliates. Now, according to the recently issued 1974 annual report, this process has become practically impossible. This states that "in some cases it has not even been possible to obtain working permits for highly qualified personnel whose transfer to Vevey fulfilled an urgent need which it was impossible to satisfy on the Swiss labour market." This is not a problem for Nestlé alone, by any means. But the Swiss food giant is particularly hard hit since 40 per cent. of the executives working in Vevey are foreign nationals.

Locals

Thus of the little over 300 Nestlé factories all over the globe at the present time, 88 (or nearly 30 per cent.) are in the developing nations of Asia, Africa and Latin America. In recent years, the Swiss concern has been developing a growing share of the responsibility for running these companies on local nationals, which has involved bringing many of the latter to Vevey for training. Hence, the suggestion that in the future the company may have to transfer some of these and other activities outside the borders of Switzerland. Eventually the step seems inevitable, as the only possible solution. Any relaxation by the Swiss authorities of their present labour permit policy seems highly unlikely.

Nestlé itself points out that the rejection by the Swiss people in a popular referendum of last October of an initiative by the Right-wing National Action Party to tighten regulations has hardly improved the situation at all. Now, the same party is returning to the attack by launching a new initiative which calls for the imposition of a special tax on all firms which employ more than five foreigners. Nestlé, with several hundred on the payroll at Vevey, would be a prime target.

Foreigners

People should retire when they want

BY GWILYM ROBERTS, MP

THE GOVERNMENT'S new pension provisions not only fail to remove sex discrimination they also fail to take effective steps to encourage active men and women to remain at work, or to make provision for those who need to retire early.

It is incredible that in 1975 a Government stressing the removal of sex discrimination is perpetuating a system whereby the retirement age for women is 60 and that of men is 65. The anomaly is, of course, heightened by the fact that the life expectancy of a woman at 60 and 65 is some four years greater than a man of the same age. The following extract from the 1974 Annual Abstract of Statistics shows that the life expectancy of a man of 65 is 12 years while that of a woman of 60 is nearly 20 years.

Britain has a rapidly ageing population. In 1911 only one in 17 was over 65; by 1955 the

proportion of over 65s had reached one in nine and now it is nearly one in seven. The 1942 Beveridge Plan—Social Insurance and Allied Services—appreciated this ageing-population problem and proposed that

Life Expectation (Years)		
AGE	MALE	FEMALE
60	15.2	19.8
65	12.0	16.0
70	9.4	12.4

the conditions governing pensions should be such as to encourage every person who can go on working after reaching pensionable age to go on working and to postpone retirement and the claiming of pension. Yet in 1975 an enquiry at the Department of Health and Statistics shows that the life expectancy of a man of 65 is 12 years while that of a woman of 60 is nearly 20 years.

In fact, the problem is more complex as there is a substantial shift towards earlier retirement. The proportion of men taking

60-64		65-69	
Males	Females	Males	Females
1,462,900	1,670,000	1,169,945	1,477,065
1,267,575	470,900	357,550	190,055
86.6	28.2	30.6	12.9

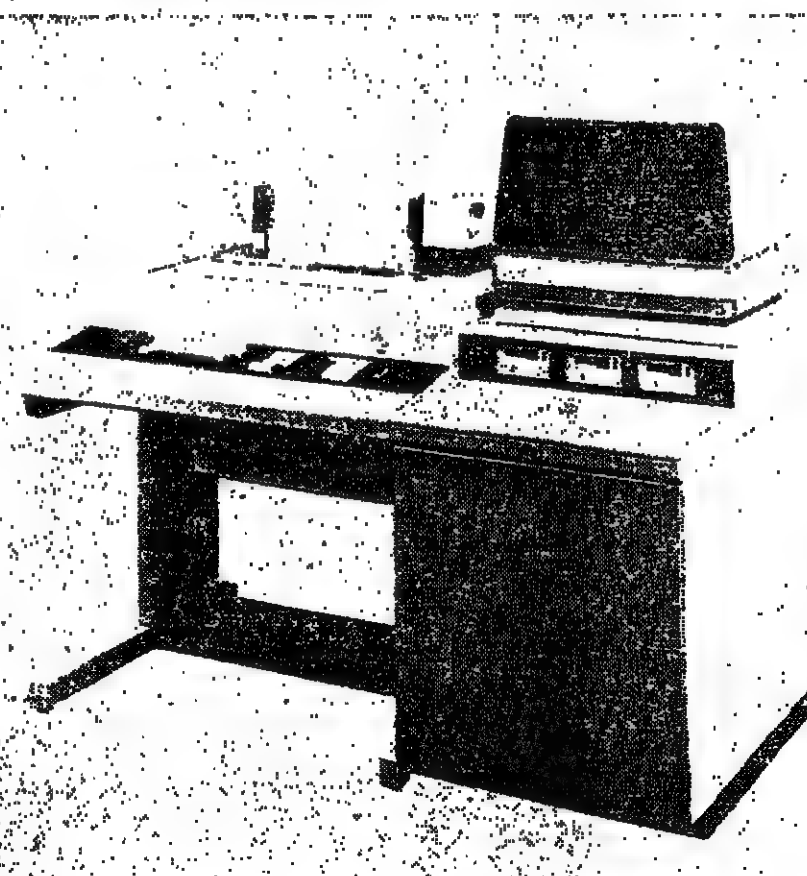
the range to do so with an adequate pension while at the same time giving real encouragement for the majority to remain at work into their later sixties. The figures from the latest Census show that at the moment only some 30 per cent. of males and 13 per cent. of females are still economically active after the age of 65.

The major problem is to determine what pension incentive is required to persuade people to carry on working. The failure of the existing pension scheme to convince men of the advantage of postponing retirement from 65 to 70 is understandable. A married man earning the average wage of £47 and paying graduated contributions since 1961 would be entitled at 65 to a total pension of £20.17. After he deferred his pension for five years until he was 70 then his entitlement would be only £26.63 (at 1975 pension levels). This represents a deferred incentive of under 6½ per cent. per annum.

Company pension schemes are by no means over-generous in this respect: many of them offer only 6 per cent. per annum in pension addition for deferring retirement until after the normal pension age. One or two of them, however, like George Wimpey and Company, offer 4 per cent. per month, a more realistic 9 per cent. per annum for deferring retirement.

In the final quarter of the twentieth century we will have to give more and more attention to the complex problems of retirement and the need to persuade men and women to remain at work.

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TUESDAY, MAY 27, 1975

Resistance to import curbs

THE PRESSURE on the Government to introduce import controls, either general or selective, has been growing steadily in the last few months. Quite apart from the arguments put forward by the "Cambridge Group" of economists and others, there have been appeals from several major industries—notably cars and textiles—for special protective measures. The Government has obviously considered the possibility of import controls as one way out of our present balance of payments troubles, but so far, at least, the threat of retaliation from our trading partners has been a strong enough deterrent. As for the demands from individual industries, the Government has done little more than express sympathy and promise to examine the facts of each case.

Negotiations

In textiles, the Government was reluctant to reject the manufacturers' request for an immediate 20 per cent cut in imports. The recession has certainly hit this industry hard, and it has always been peculiarly vulnerable to low-cost imports from developing countries. But successive Governments have decided that the problem is best dealt with on an international basis. Under the Multi-Fibre Arrangement the European Commission is negotiating with individual exporting countries to ensure that the rate of growth in their sales to the EEC is controlled and that the burden is shared fairly among all the EEC countries; at present the U.K. takes a disproportionately large share of these imports.

The Prime Minister pointed out last week that to take unilateral action on imports while these negotiations were in progress would be contrary to our GATT obligations and would provoke retaliation. Many textile companies are facing serious problems and the fact that imports are continuing to come in on a substantial scale (though below last year's levels) makes their situation worse. But the

Lack of supply

In several industries, however, the increase in imports over the last year or two has nothing to do with unfair competition, but simply reflects the inability of domestic manufacturers to satisfy the market. Supply problems in the steel and motor industries gave importers the chance to establish themselves; not surprisingly, they have proved difficult to dislodge even when demand has turned down. The domestic manufacturers created the problem and there is no reason why the Government should bail them out of it.

A testing week for Atlantic Alliance

THIS IS a week of many high-level meetings within the broad framework of the Atlantic Alliance. To-day the Foreign Ministers of the members of the International Energy Agency (IEA) meet in Paris. Tomorrow most of the same Ministers will be attending the Ministerial session of the OECD. On Thursday and Friday most of them move to Brussels, accompanied by Heads of Government, for Nato.

The three organisations have slightly different memberships and different functions. Yet, this time, they have a number of common items on the agenda which can be broadly summed up as the need to maintain solidarity at a time of great financial difficulty.

Three fronts

That means establishing an agreed position on three fronts: towards the oil producers, towards the developing countries in general, and towards the Warsaw Pact. There is an overlap here, which is of relatively recent origin, simply because if the western economies are hit by another commodity crisis of the kind that the Yom Kippur war set off in oil, the will and ability to maintain adequate defence expenditures could be further weakened.

Dr. Henry Kissinger, U.S. Secretary of State, who will be attending all three meetings, has indicated that he has already taken the point. He has said that America is now conducting bilateral talks with a view to a resumption of the dialogue between producers and consumers which broke down in Paris last month.

This is a softer line than the U.S. has adopted in the past. It may owe something to the efforts of Mr. Harold Wilson at the Commonwealth Prime Ministers' Conference to begin a dialogue on commodities and financial stabilisation schemes.

In practice, it amounts to a recognition that relations between developed and developing countries have been entirely capable of maintaining the balance of power in Europe, but not by outdated moral gestures.

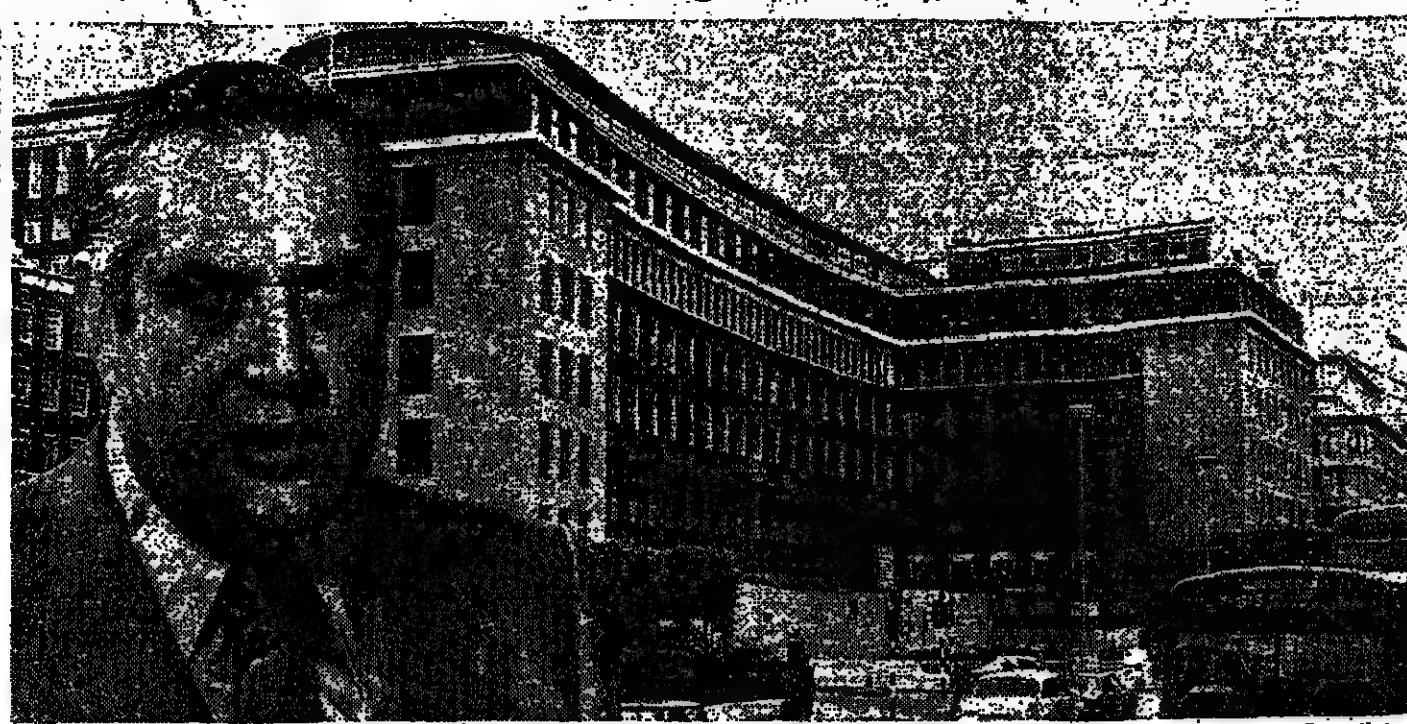
Moral gestures

In this respect, the attitude of the European Defence Ministers meeting in Brussels last week was disappointing. Most of them refused to give any kind of acknowledgment that the U.S.-Spanish defence agreements contribute to the defence of Europe or to give any encouragement to Spain's more moderate forces.

Given the way the Europeans have watched Portugal move to the left—against the wishes of the majority of its own people—this refusal to take an objective view of Spain is a luxury they cannot afford. Nato is entirely capable of maintaining the balance of power in Europe, but not by outdated moral gestures.

The prospect that institutions could pull out of property investment is real, reports John Trafford

A community battle over the Community Land Bill



Mr. John Silkin, the Minister for Planning and Local Government, who is responsible for piloting the Community Land Bill through Parliament. The building, Gateway House in the City, was bought by the Imperial Tobacco Pension Fund for £27.7m. in 1972 and is being refurbished.

THE news that some of the country's largest landowners are organising themselves to fight the Government's latest proposals for nationalising development land will come as no surprise. For it is easy to imagine a band of elderly gentlemen in plush-fur coats fuming over the iniquities of Socialist legislation. But the reality is rather different. For the landowners in question are the managers of Britain's leading life insurance and pension funds; and the battle they are fighting is one which affects almost every wage and salary earner in the country.

At the last count, a year ago, nationalised and private industry pension funds had £13.3bn. invested in real estate—much of it in offices, shops, factories and warehouses—and a further £274m. in property unit trusts. Between them, pension and life funds spent about £600m. on property investment in 1973-74.

Fund managers' worry

The worry of the fund managers is that, if the Community Land Bill, now in its Committee Stage in the Commons, goes through without major amendments, they may well have to start pulling out of property investment.

To those who have watched the low rate of British investment in manufacturing industry and have seen the "unproductive" allure of commercial property investment, such a move may seem not only welcome but overdue. However, as politicians and businessmen have discovered following last year's slump in property values, a healthy property market is needed for a healthy economy. Property is a fundamental asset which companies use as collateral for their borrowings. Devalue it, and you destroy much of the creditworthiness of companies who need to borrow funds.

Thus the prospect of the institutions withdrawing from property investment is not to be taken lightly. All sides—themselves, policyholders, and pensioners—could feel the shock waves. The Government's dilemma now is to judge whether the institutions are engaged in an elaborate game of bluff or whether they really mean what they say.

In making such a judgment,

one must be clear about the institutions' exact view of the Community Land Bill and its associated Development Land Tax. In essence they are worried about three things: the definition of "relevant development" (the kind of development for which land can and later must be acquired by local authorities); the length of leaseholds to be granted by local authorities; and finally the wide powers entrusted to local authorities and the Secretary of State to make compulsory purchases of land.

These three points mesh closely together in the mind of the institutional manager. If property is to remain a suitable investment vehicle for long-term funds, it must be a "safe" long-term asset. If the Bill goes through unamended, it may no longer seem to him so safe.

Right economic course

The worry over "relevant development" concerns both the properties which the institutions hold at the moment and the development schemes (or completed property) which they might find in the future. Buildings, like everything else, wear out and the owners must undertake rebuilding, modernisation and expansion when this seems the right economic course to follow. The replacement of, say, an old office block by a new one has not posed many problems in the past. Under the 1971 Town and Country Planning Act, owners have been able to develop their properties under the so-called "8th Schedule Tolerances". This in effect has allowed buildings to be rebuilt to their former floor area plus 10 per cent, provided the design was acceptable and neighbours' rights of light were not harmed.

The new Bill places a question mark over rebuilding. For it seems that any building that is demolished is by definition a candidate for "relevant development". If that is so, the local authority will have the freedom to acquire the freehold of the property as soon as the present owners submit an application to carry out the rebuilding. Once the permanent land scheme envisaged in the Bill comes into effect (and

in the final state of affairs term is unlikely to be in the mind of Mr. John Silkin, the Minister for Planning and Local Government, who is responsible for piloting the Community Land Bill through Parliament. The building, Gateway House in the City, was bought by the Imperial Tobacco Pension Fund for £27.7m. in 1972 and is being refurbished.

INVESTMENT IN LAND AND PROPERTY (£m.)					
SECTOR	1970	1971	1972	1973	1974
Insurance companies (long term funds, net investment)	203	189	124	285	292
Pension funds* (direct)	95	93	131	291	
(via property unit trusts)	30	43	39	25	
TOTAL	328	325	294	601	

* Figures for financial years 70-71, 71-72, 72-73, 73-74

no-one will make any guesses as to when that will be) local authorities will actually be obliged to buy properties in need of rebuilding.

If the Bill really worked this way in practice, the institutions would slowly find their existing freeholds being converted into leaseholds from the local authority. There is also the danger that the local authority, having compulsorily acquired the freehold, would not even offer the leasehold back to the institution to carry through the rebuilding.

To remove this problem, the Tories have been pressing in Committee for the introduction of a "Replacement Development Certificate" to be issued in cases where the local authority cannot prove to the central government that the area occupied by the building is needed for comprehensive redevelopment or some other use such as a fire station, public library or hospital.

is not "relevant development". The Department of the Environment last week produced a consultation document on the scope of acquisition powers, and duties.

The second crucial question is the length of the leasehold which a local authority might grant. Many people in the property world have reacted quite violently to a question put to the various official bodies representing property by the Pilcher Committee (this committee is advising the Department of the Environment on matters relating to government land policy). The Committee asked whether 60-year leaseholds would be acceptable to institutional investors in property. The answer was a predictable and very emphatic "No."

The institutions would doubtless agree that a 999 year leasehold is acceptable if no freeholds are available, but even they realise that such a lengthy

to object to a compulsory purchase order. Since land acquired in this way will be bought by local authorities at prices slightly above current use value and later at no more than current use value, land owners stand to lose heavily. This may be fair for those who have owned their land since time immemorial but for those who acquired it more recently at prices reflecting its development potential there is certainly an element of rough justice—or injustice.

It is easy enough to envisage the sort of situation that might arise. A nationalised industry pension fund, owning a number of old properties in a provincial town centre, makes a planning application in late 1974. The local authority takes 18 months to process the application (such delays are commonplace). Once granted, the planning permission is frozen under the Community Land Act and later in 1976 the same authority acquires the site compulsorily. The pension fund loses money because the compensation is paid at current use value, and loses more merely because of the delay in the agreement of compensation. To cap it all, after agreeing a leasehold on the site to the highest bidder, the local authority awards the scheme to another developer.

Disincentive effects

Some of the leading pension funds believe that if the worst disincentive effects of the new compulsory purchase procedures are to be avoided, the Government must accept two amendments to its CPO proposals. First, they want local authorities to be obliged to state their reasons for serving a compulsory purchase order so that some grounds for objection are provided. Secondly, they want the Government to accept "pre-emption"—doing it before

Compulsory purchase

The third worry is over the much enhanced powers of compulsory purchase which local authorities will enjoy under the new legislation. They will not have to specify the precise purpose for which development land is required under a compulsory purchase order. Furthermore, the Secretary of State will be empowered to disregard objections made on the ground that the acquisition was inexpedient or unnecessary. Finally, the Minister would not have to hold an inquiry into objections, although it is fair to add that the Government's powers in this field would be no greater than those they already have in the limited sphere of new town development under the New Towns Act. Mr. Silkin and Mr. Croxall have both been at pains to reassure their critics that these powers will not be used for a draconian way, but that their soaring words have had little impact.

Institutions and other owners of land be given, so far as any one can tell, no grounds in law for objection of capital.

MEN AND MATTERS

In deference to OPEC

Like the IMF, the World Bank grows steadily more obsequious towards the OPEC cartel—the one currently borrowing about 70 per cent of the money it lends out. The latest example is an internal memorandum sent out to all staff on May 15, which is intended to make sure that no one visiting an oil-rich country accidentally says the wrong thing—and gets the Bank into trouble with its new benefactors.

Henceforth, all visits by Bank staff to OPEC countries (apart from at a very low level) and also all contacts with OPEC representatives must be cleared first with the Vice-President for Finance, who is in charge of borrowing money. The memorandum speaks coyly of the Vice-President for Finance's "special responsibilities" for the OPEC countries and urges the staff to "seek his early advice on any matters in which they are involved that might affect the Bank's relationship with them."

This is not the first example of the special concern the World Bank and the IMF are both showing for the oil-rich nations. Although the Bank's latest studies show that the oil price rise has wiped out any hopes of economic growth in most of the developing world for the rest of the decade, the Bank refuses to breathe a word of criticism of OPEC.

Its chief economist, Dr. Hollis Chenery, has continually argued in public that the industrial world can afford the new OPEC oil prices—comparing them to the Marshall Aid plan after the war. And it was not until the Wall Street Journal made a fuss about conflict of interest that he was forced to resign from the Board of a family-owned natural gas company.

All change, no change

The annual Co-operative Congress taking place in Edinburgh has a woman president for the first time in 53 years. She is Mrs. Eva M. Dodds, who is chairman of Co-operative Retail Services, the firefighting side of the movement, which rescues societies in distress.

In her president's address to Congress she laid the usual stress on the appropriateness of a woman holding this office in International Women's Year. According to her the year "should provide an unprecedented opportunity for women and men to achieve one of the most significant social changes of our century." Mrs. Dodds then let it be known to Congress that she would prefer to be called "Mr. President."

Inconvenient

As the principal figures in the Great Bordeaux Wine Scandal this week sit into court once again for the appeal hearings which follow their convictions last autumn, their counsel will no doubt take note of the simultaneous publication in France of one man's memoirs of the affair. Pierre Bort, who

shocked the wine world when he told the trial judges last November that "everyone in Bordeaux" indulged in fraud—and received a 12-month jail sentence for his candour—has written a book detailing the way in which he masterminded the £2m. swindle. He has called it *In Vino Veritas*.

The yak trade

Four people who will not be here for the EEC referendum are the members of Britain's first trade mission to Mongolia. They will be in Ulan Bator all next week and will probably spend the big day touring a state yak farm.

Heading the mission is John Cooper of Shell, participating in the visit as deputy chairman of the East European Trade Council, which promotes our trade with Comecon, of which Mongolia is the most far-flung member. With him will be the Council's executive secretary Tony Hore, and one of the Bank of England's overseas advisers, Ron Gilchrist. Completing the team is Maureen Green, managing director of Annan Chadwick and Kiver Produce, which buys Mongolian furs, like the rare arctic leopard and yak wool, which account for most of the tiny trade between the two countries (a mere £127,000 last year).

The trade is not, so far, expanding, despite a 1973 signing, with some flourish, of the first trade agreement with both countries saying they would try to speed things up. The stagnant situation may be judged from 1972 figures of £128,000 worth of Mongolian exports in Britain, almost all hides and skins, wool and fibres, with £29,000 worth of machinery, scientific and medical equipment going out from Britain.

Can this deficit be made up

and the London-Ulan Bator trade axis strengthened? None of the four on next week's mission has been there before—it will take the three men two days to fly there on Aeroflot via Helsinki, Moscow and Irkutsk, while Miss Green will arrive on the train from China where she has been at the Canton Fair.

Tony Hore says he has been flooded by inquiries from exporters attracted by the novelty of selling to Mongolia. He has, for instance, got a quotation for a mobile bone crusher which Ulan Bator specifically asked about. But he finds it hard to assess the ultimate prospects. With 1.5m. inhabitants and 25m. sheep, yaks and horses in an area six times that of Britain, the market is "rather special," he says.

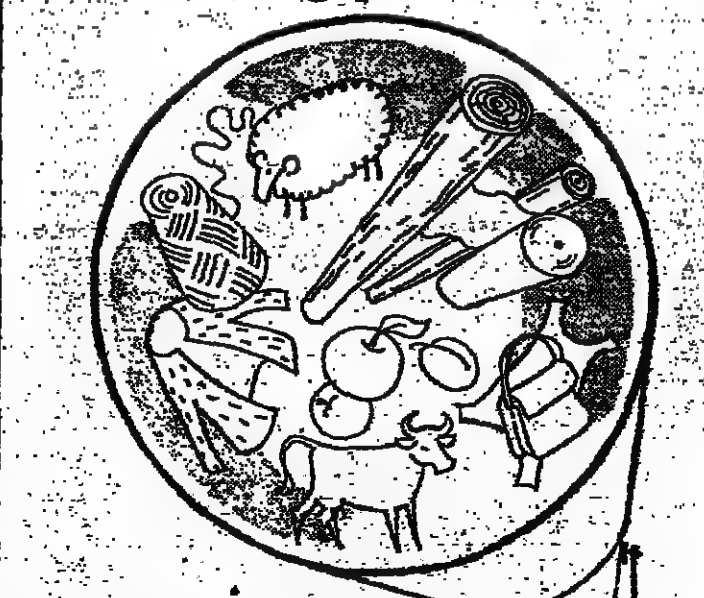
However the mission should receive a fair welcome, the British ambassador there, Miles Ponsonby, having been busy fixing it all up and the Mongolians having never received such a delegation before. It would not be the right time of year to celebrate with the traditional mare's milk, which flows in July, but one thing Mongolian industry does include is a vodka factory.

Help at hand

Included among summer school courses at the University of San Francisco is something called the "Laboratory in Pastoral Ministries." What it does is use the "language of relationships" to communicate with "persons with unusual needs and life-styles, such as the sick, the ageing, broken families, communal families, alcoholics, ethnic minorities, homosexuals, stockbrokers."

Observer

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FINANCIAL TIMES SURVEY

Tuesday May 27 1975

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AEROSPACE

The U.K. aerospace industry goes to this week's Paris International Air Show confronted by several immediate uncertainties, including the plan for nationalisation and the forthcoming referendum on EEC membership. In the long-term, what it will need most, whatever its structure and ownership, is a clearly-defined strategy, embodying performance goals for the 1980s and beyond.

AT A TIME when the world's aerospace industries collectively are suffering from the effects of the economic recession, the U.K. aerospace industry in particular has additional uncertainties to face that, however they are resolved, are certain to result in major changes not only in its basic structure but also to some extent in its future direction.

The first of these is undoubtedly nationalisation—the Government's intention to take over British Aircraft Corporation, Hawker Siddeley Aviation, Hawker Siddeley Dynamics and Scottish Aviation, and weld them into a new organisation called the British Aerospace Corporation. The industry's leaders are unanimously opposed to this proposed State takeover, on the grounds that it is irrelevant to the problems the industry faces to-day, and that it will take up much of the time and energy of executives, and monetary resources, that ought to be devoted to dealing with the other problems looming over aerospace not only in the U.K. but throughout the world.

Even if the nationalisation Bill should be deferred because of pressure of other Parliamentary business, the threat will remain for the next session. The industry will certainly try to get the Bill amended, not only to improve the terms of Mulder-Rolls, but also to ensure that the very British Aircraft Corporation wide scope that it gives to extend the possibility of State takeover to other companies in the aerospace and associated electronics, equipment and component industries is modified.

The industry's leaders regard nationalisation as irrelevant, because the Government already controls much of what the industry does. In effect, no major project of any kind can now be started in the U.K. without Government financial support. It is not clear to why the Government wants to spend such large sums on nationalisation (at least £100m. to acquire the assets), at a time when it has said it is anxious to cut down on public spending. It is being suggested that if Corporation, Hawker Siddeley spend this kind of money on Dynamics and Scottish Aviation, and weld them into a new organisation called the British Aerospace Corporation. The industry's leaders are unanimously opposed to this proposed State takeover, on the grounds that it is irrelevant to the problems the industry faces to-day, and that it will take up much of the time and energy of executives, and monetary resources, that ought to be devoted to dealing with the other problems looming over aerospace not only in the U.K. but throughout the world.

Spare

For that kind of money, it is claimed, the industry could embark upon at least three more Concorde, build the new quiet Spey 67 engine and other quiet engines, ensure the installation of the Dash 534 version of the Rolls-Royce RB-11 engine in the Boeing 747 Jumbo jet, develop the Interceptor Version of the Multi-Role Combat Aircraft, undertake the development of the British Aircraft Corporation Series 800 or Series 700 One Eleven short-to-medium haul jet airliners, restart the Hawker Siddeley HS-146 feeder liner programme, keep some guided weapons programmes alive, and still leave something

to spare for other ideas for the future. Collectively, these ventures add up to a major programme of activity that would ensure for the industry a clear run with full employment and good export prospects through the 1980s, and, even more

important, maintain continuity of design effort. The second major uncertainty hanging over the U.K. industry at this time is the forthcoming referendum on membership of the European Common Market. As long-standing adherents to the principle of international collaboration, especially with Western Europe, the leaders of the U.K. aerospace industry are openly hoping for a major "Yes" vote in the referendum. Only this can ensure, they feel, that the U.K. remains in the European Economic Community and thereby retains a major voice in the decisions that will have to be taken in the immediate future on the closer co-ordination of the European aerospace industry to meet the increasing threat of competition from the U.S.

While it is clear that a "No" vote would not be likely immediately to result in the dissolution of the massive array of international collaborative ventures that the U.K. industry has undertaken with Europe over the past few years—some of them, such as Concorde and the Multi-Role Combat Aircraft, are too far down the development road for that to occur—it would be bound in the long run considerably to influence the next generation of projects of civil and military development that will be necessary to keep the U.K. in the forefront of world aerospace development in the years ahead. Although the overall objective behind the creation of a much more tightly-knit

haul aircraft market, where a major breakthrough has already been achieved by the A-300 European Airbus. The possibilities of exploiting this situation, and developing the A-300 into a "family" of types for the future, is immense, and

offers one of the most promising areas of future activity for a combined European aerospace industry with the U.K. playing a major role. This question of closer collaboration with Western Europe leads inevitably to the problem of whether or not the U.K. industry needs some measure of rationalisation, with or without nationalisation. There seems little doubt that no matter what may happen in the light of current U.K. domestic politics, the industry, currently employing over 200,000 workers, will have to become slimmer in the period immediately ahead. World economic conditions which have severely cut back demand for all kinds of civil aircraft, and inflationary factors together with increasing complexity which have also made the costs of military aircraft so formidable as to reduce substantially the number of types on offer and the numbers of aircraft that customer governments can buy, are certain to result in intensified competition for aerospace

is still recognised despite the current slackness stemming from short-term industrial and business difficulties. The second is that nationalisation must not be allowed by the Government to be an end in itself. There is no benefit to be gained by anyone in having a State-controlled aerospace industry with no clearly-defined programme to undertake. Others perhaps more realistic, argue that so far there has not been the kind of pressure on the industry to achieve this that there ought to have been, and that, therefore some kind of enforced rationalisation is essential. These questions are all arguable—and, indeed, have been discussed ad nauseam within the board-rooms of the industry. From all this discussion, two things stand out. The first is that whatever is going to be done to the industry politically should be done as quickly as possible, so as to avoid any kind of damaging hiatus in which investment is at a low ebb and decision-taking is paralysed. Aerospace, perhaps more than any other industry, is working all the time at the frontiers of new scientific and technological knowledge, and as such involves a higher proportion of some of the best technological brains in this country. These people are at a premium. By virtue of their intelligence and ability they can command high salaries and better working conditions almost anywhere else in the world—especially at this time on the Continent and in the U.S. places where the bright long-term future of aerospace is still recognised

European aerospace industry is to break the dominance of the U.S. aircraft manufacturers—who last year supplied no less than 84 per cent. of the European airlines' requirements—it has to be accepted that this will be a long, tough struggle, and that there are some areas, especially in the civil field, in which the Europeans are never likely to be able to compete.

No one, for example, can really see the European industry developing a competitor to the Boeing 747 Jumbo jet in all its present and potential variants, even if it wished to do so—which it does not—while even the two medium-range jets, the Lockheed TriStar and the McDonnell Douglas DC-10—have now gone so far down the road that there is no point in spending vast sums in trying to catch them up.

But there are some programmes in which the Europeans do have a chance of catching up, and even of beating the Americans. One of these is the high-density short-

haul aircraft market, where a major breakthrough has already been achieved by the A-300 European Airbus. The possibilities of exploiting this situation, and developing the A-300 into a "family" of types for the future, is immense, and

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A time of uncertainty

By Michael Donne, Aerospace Correspondent

SHORTS

International Co-operation.

Shorts' success in the aerospace industry is based on international co-operation.

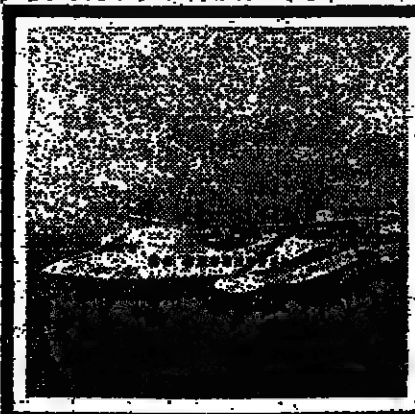
Since 1908 when they collaborated with the Wright brothers to set up the world's first aircraft production line, the company has been involved in co-operation across the globe as designers and manufacturers of aerospace products.

Shorts newest aircraft, the SD3-30 wide-bodied commuter, is being built in collaboration with both European and North American manufacturers. The company is part of a European consortium producing the F.28. Fellowship short-range jetliner; it is podding Rolls-Royce engines for the Lockheed TriStar and VFW 614; it is manufacturing structural components for the Boeing 747 and the Lockheed TriStar; its Skyvan light aircraft is in service with 22 countries, and its Blowpipe, Seacat and TigerCat missiles have been ordered by 18 nations.

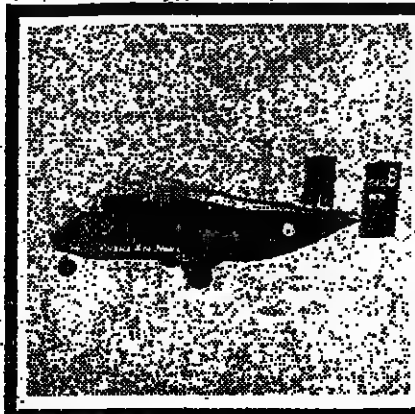
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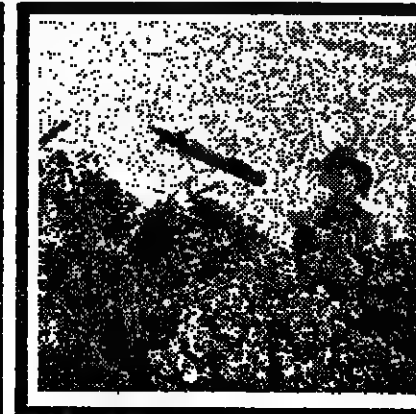
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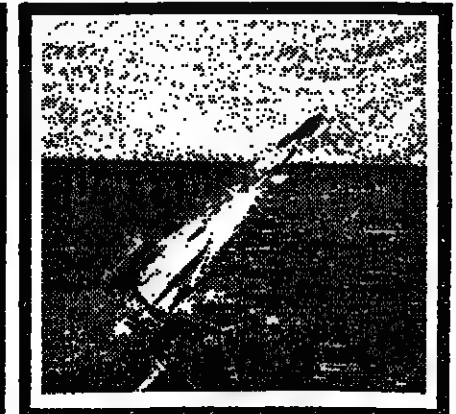
ENGINE PODDING



AEROSTRUCTURES



BLOWPIPE



SEACAT/TIGERCAT

AEROSPACE II

Many new markets for helicopters

AT A TIME when aircraft manufacturers as a whole are facing one of the toughest periods in their history, the helicopter industry is enjoying substantially better conditions, and look like being able to sell virtually everything they can make for some time to come.

There appear to be several reasons for this. One is that the unique capabilities of the helicopter, making it virtually the "workhorse" of world aviation, are increasingly in demand for a wide variety of tasks that either cannot be performed at all in any other way or would be more difficult and expensive to undertake with different forms of transport. These tasks range from servicing North Sea oil rigs and relieving lighthouse keepers through to agricultural aviation, such as crop dusting, and spinning power cables across remote valleys. The list of uses for the helicopter grows longer every day, and despite the wide range of machines now available on the world market there seems to be an almost insatiable demand for this ubiquitous aircraft from both civil and military users.

Secondly, this same very wide range of craft on offer ensures that there is a helicopter for almost every price bracket, and although there are, by fixed-wing aircraft standards, comparatively few helicopter manufacturers—there are only four major ones in Europe, for example (Westland, Aerospatiale, Agusta of Italy and Messerschmitt-Bölkow-Blohm of West Germany)—the competition is tough and this helps to keep prices keen despite the effects of inflation.

Undeveloped

Furthermore, military requirements account for the biggest proportion of all helicopter sales, and these are really only just beginning to be met in many countries of the world, with the promise of substantial orders to come in the years immediately ahead. This expansion in military demand, when married to the civil market that is in an even more undeveloped state, appears to ensure a strong level of helicopter sales for a long time to come.

But although the outlook may be brighter than in the fixed-wing aircraft market, conditions for the helicopter manufacturers remain tough. Each and

every order has to be fought for hard, with European and U.S. manufacturers all in the field. Development costs continue to rise, and the current rate of inflation in the U.K. in particular is a continual cause of concern to Westland Helicopters.

Westland Helicopters itself had a turnover of about £50m. last year, of which a substantial proportion was overseas, especially with Western Europe, with whom collaboration is strong, through the Anglo-French helicopter agreement. This is one reason why Westland as a whole is anxious to see Britain remain in the Common Market.

Sir David Collins, chairman, says: "In my view it is essential to our country's future well-being that we continue to remain a full member of the EEC. It is significant that it is a group of politicians, both red and blue in colour, who delude themselves that we can achieve acceptable business terms as small independent country. Those of us who have been intimately concerned in business negotiations in both Europe and America know perfectly well that the weak go to the wall."

It is partly the need to try to spread the burden of development costs on new projects and to widen the possible markets that, as in the fixed-wing aircraft field, most of the major helicopter manufacturers have tended to seek international collaborative arrangements. Westland and Aerospatiale, for example, whose combined helicopter divisions create the biggest helicopter manufacturing force in the Western world, have worked together for several years on the trio of helicopters to meet U.K. and French navy, army and air force and other requirements—the twin-engine Puma tactical transport aircraft (over 400 sold), the single-engine Gazelle light 8-seat helicopter and the Lynx twin-engine multi-role helicopter. These two companies have also now formed a new joint company, Heli-Europe Industries, with a view to defining new helicopter ventures for the next decade or so. This does not preclude the two companies from working on indigenous designs of their own, and Westland is currently seeking orders for its Model 806, a 13-seat civil derivative of the Lynx, while Aerospatiale is working on the Dauphin, a family of aircraft based on a basic airframe. The Westland Lynx itself is being supported substantially with

orders for over 120 aircraft from the U.K. and French armed forces, with substantial further orders expected in future, despite defence spending cut-backs in both countries. Westland has also won export orders for the Lynx from the Brazilian Navy and the Netherlands Navy, and discussions are in progress with the Egyptian Government on the possibility of setting up licence-manufacture of the Lynx in that country, with up to 250 aircraft in mind.

Ageing

Westland also foresees a market in Europe for the replacement of some 2,000 ageing helicopters of the light/medium class by the 1980s, and this is one of the areas now being studied by Heli-Europe Industries.

This trend towards international collaboration has also been followed by the other two major manufacturers in Europe, Agusta of Italy and MBB of West Germany, who, it was reported recently, have been holding joint talks with their Governments to define future military helicopter requirements. At this stage, it is probably going too far to suggest that all the four major helicopter manufacturers in Europe might get together to meet the needs of the future, but in view of the growing pressures from NATO for standardisation of weapon systems of all kinds, as much to ensure military efficiency as to keep costs down, some such collaboration may well eventually develop.

Already, for example, a requirement is emerging for a 20-25 seat helicopter to replace the Bell UH-1D 12-seat tactical transport helicopter, of which a substantial number were built under licence in West Germany. At present no "design competition" as such exists, since no clear requirement has yet been stated by NATO. But all the four major European helicopter manufacturers are studying the potential need, which in effect amounts to a European equivalent of the current U.S. requirement for a Utility Tactical Transport Aircraft System (UTTAS). It is possible that eventually some common design may evolve, embodying the best features from the submissions of all four companies, with all of them becoming involved in its manufacture. Several hundreds of helicopters would be needed to meet this requirement.

In the meantime, the four

companies' existing designs continue to sell well. Westland in addition to its work with Aerospatiale on the Puma, Gazelle and Lynx, is continuing with its big Sea King, for which orders to date total 155, including 99 for export, of which about 130 have been delivered. With a wide range of variants, including the troop transport Commando version, Westland sees work on the Sea King continuing for some time to come, with substantial follow-on orders expected, and it has ideas for new variants in gestation. Aerospatiale, which has sold over 4,000 helicopters over the past 20 years, in addition to the Anglo-French programme, is concentrating upon the Dauphin family of types (the SA-360 with a single Astazou engine, the twin-Ariel powered SA-365 and the twin-engine SA-366), as well as on the big Super Frelon transport helicopter, and the highly-popular Alouette, and Lama light helicopters. In West Germany, MBB is building on its success with the BO-105 light helicopter with bigger variants, such as the BO-106 and 107, an anti-tank helicopter, the BO-115, and the even bigger 30-25 seat BO-125. In Italy, Agusta is concentrating on its new private-venture A-109 Hirundo (Swallow) twin-engine general purpose helicopter, for which a substantial Italian military order is expected in the near future, while the company is also manufacturing under licence the Boeing Vertol CH-47 Chinook and a range of light helicopters, such as the Bell Jet Ranger and the Sikorsky SH-3D.

Probably the most significant fact about the European helicopter industry at this time is that whereas it was built up on the licence-production of American types, and that while these still account for a substantial volume of all European helicopter production, it is now moving out into the world market in its own right, with a widening range of indigenous designs that are highly competitive in both engineering capability and in price with the best that the U.S. industry can offer. Even if the intra-European collaborative ventures initiated to date go no further, it is already clear that the helicopter industry on this side of the Atlantic will be more than capable of holding its own in world markets.

Michael Donne

THE BRITISH aerospace equipment industry, although apparently well satisfied with the level of orders from U.K. or European co-operative ventures, continues to look towards expanding its markets and is making continuously greater efforts to penetrate the U.S.

With the number of new projects in Europe now fairly limited, and the amount of purely national projects likely to decline, it is clear that alternative markets will be sought with increasing vigour. Even the Soviet Union, the world's second largest but most formidable market, is attracting attention.

At the same time, the process of rationalisation within the European industry continues, in parallel with co-operative projects which have in general proved successful despite criticism that they lead to duplication and inefficiency. But a negative result of the U.K. referendum on membership could halt the integration in Europe, although it will probably not induce companies with interests in France or Germany to get rid of them.

Similarly, the Government's nationalisation plans are thought unlikely to have very great effects on producers of equipment, as much of their work is connected with Government anyway, and in fact may make their job easier in having to deal with one corporation instead of two or more. But the industry also believes it will lead to contraction of work.

Sights

Looking at the various alternative markets, the U.S. is the obvious target which most companies have in their sights and Lucas Aerospace, the country's biggest producer of built-in equipment estimates exports there to be running at £13.5m. a year, mainly connected with the RB-211 engine, compared to turnover of £60m. a year. Work in Europe runs at around £4m. a year, the rest of the world £1m. and the remainder within the U.K.

Recent successes by the company include contracts for Boeing 747 flap mechanisms and equipment for de Havilland Canada's Buffalo. But perhaps more significant is the exchange of technology agreement made with the Soviet Union, which means that if Lucas cannot sell its equipment to the Russians, it can at least make some profit out of its technology. It has already supplied a generating



Naval version of the Westland-Aerospatiale Lynx is seen during deck landing trials on the French frigate "Tourville."

Equipment makers look to U.S. expansion

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system, developed first for the Hawker Siddeley Nimrod for the TU144. Total aircraft equipment turnover in Western Europe is now reckoned to be running at more than £500m. a year, with Britain's share estimated to be about 45 per cent, or more than £220m. a year. In 1970-71, the U.K. was followed by France with 28 per cent (£130m.), Germany 11 per cent (£51m.) and Italy 10 per cent (£47m.). The remaining 7.5 per cent was shared by Sweden, Spain and the Netherlands.

Against that, Lucas' £2m. a year business with the Soviet Union over a period of five years may seem insignificant but there is no doubt that if the market can be unlocked, there are great rewards to be won. Co-operation will be across the board, although the Russians are known to have a requirement for electronic engine controls and digital control, which has been proved to be operationally successful in the Tri-Star.

Another area of development which Lucas believes to be promising in all markets is new combustion techniques, one of which is the burning of fuel at higher temperatures to improve efficiency and reduce pollution. Work has also been carried out on a hydrogen combustion system, and successful tests carried out so that the company can be ready if the need arises for an alternative fuel to be used.

These developments will be shown in Paris, where there will no doubt be considerable evidence of the company's push into France through its subsidiary Thomson Lucas which has concentrated on the manufacture of electrical generating equipment. It is known that further acquisitions are planned there and in Germany and Italy, although this would be hindered by a "no" vote in the referendum.

Dowty, with 85 per cent, of the U.K. landing gear market, remains pleased with the level of work on hand which has been given a boost by the go ahead for the Sea Harrier, for which it will supply landing gear, a fuel system for the Pegasus engine, hydraulic and electrical equipment. Other work in progress is for Jaguar, Harrier and the HS-748.

The chairman of the group, Sir George Dowty said recently that there had been steady already supplied a generating

growth in the company's air

craft business with orders to Jaguar and the MRCA, would wards the end of last year at provide work for several years, the highest level on record with the timing for full-scale having increased during the production for the latter year by 22 per cent. Direct coinciding with the end of the experts and overseas business Jaguar programme. Output of represented around 40 per cent, the company's ram air turbines of the total and the order book for emergency power has con- was roughly balanced between, "tuned to grow and a manufac- the western world's military turing licence has been granted and civil aircraft requirements in the U.S.

It was felt that the European. Plessey too has had recent military programmes, including success in the United States.

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آلة صنع الياض

The aero-engine manufacturers

PROBABLY THE two most important problems facing Rolls-Royce (1971) to-day, as one of the world's three biggest aero-engine manufacturers, are first, the need to stem the tide of U.K. inflation, which, if it continues at its present rate, must seriously threaten to price the company's products out of the world's markets, and secondly, the need to establish firmly at an early date some of the major "new" programmes upon which the company will depend for perhaps the next 20 years or more.

Precisely the same problems can be said to face the aircraft manufacturers, who also have yet to surmount the threat of nationalisation (something Rolls-Royce overcame four years ago, when the former Rolls-Royce Limited collapsed), but for the engine manufacturer they are particularly significant at this time. This is not only because of the rapidly intensifying competition in world aero-engine markets, as economic conditions worsen and airlines and military authorities reduce their spending on new aircraft types, but also because the cost of new engine development itself is escalating at rapid rate.

Tough

Rolls-Royce is in a particularly tough market. It faces some of the most intense competition in the world, from Pratt and Whitney and General Electric of the U.S. Few outside the aero-engine business really realise just how relentless this competition is, and how unending is the demand for cash if the company is to keep up with the "big-league" in aero-engine development, through the rest of this decade and into the 1980s and 1990s. It is significant that in recent months both the major U.S. aero-engine companies have launched extensive cost-cutting programmes throughout their entire operations, so as to be able to spread limited available cash across an ever-broadening spectrum of demand for new civil and military engines. Rolls-Royce must follow this course, if it wishes to keep abreast of a technology that is developing at an accelerating rate, not only under the stimulus of anticipated future

demand both for bigger-thrust engines for bigger aircraft and engines in new power brackets hardly as yet explored, but also because of the pressures of other factors, such as the increasing demand for much greater quietness along with substantially improved fuel economy. In fact, the whole pattern of aero-engine technology is changing fast, and in order to keep abreast Rolls-Royce must not only be price-competitive world-wide, but also to some extent be one jump or more ahead of the competition. These twin tasks offer the company a most challenging period of activity in the immediate future.

The company, like the rest of the U.K. aerospace industry, is substantially dependent upon the U.K. Government for development and production finance. The Government, apart from the money it intends to spend on nationalisation of the aircraft manufacturers, already spends substantially in aerospace for a wide range of civil and military aircraft, engine and missile programmes, and is reluctant to allocate more at a time of acute pressures on central government spending of all kinds.

Yet now is just the time that a wide range of new ventures are coming forward for development funds, and this is especially true of the aero-engine field. One major example is the need for additional funding to help put the Dash 524 version of the RB-211 engine into the Boeing 747 Jumbo jet, and thus open a major new market for this high-thrust engine in the years ahead, in addition to the market that already exists for it in the later models of the Lockheed TriStar. So far, the Government, while helping to fund the development and production of the Dash 524 for the TriStar, has been reluctant to put this additional cash—estimated at about £15m.—into the development of the 524 for the Jumbo until an additional order for it is won beyond that promised from British Airways. Both Rolls-Royce and Boeing have pointed out that the order is most likely to come if the development is undertaken any way. Currently, Boeing has continued with its own work on this venture, but has made it

clear that if no U.K. Government support is forthcoming by May 30, when the agreement with Rolls-Royce is due to expire, it will discontinue that work and allow the agreement to lapse. Thus, a major opportunity for the U.K. to acquire a big new market for one of its most promising engines—indeed, its only engine capable of keeping it in the civil "big-engine" field—will lapse.

Immense

This may not seem to be a particularly tragic situation to some in Whitehall or elsewhere in the country, but the long-term consequences of it to Rolls-Royce and the U.K. aerospace industry could be immense. For there is little doubt that the Boeing 747 Jumbo jet is now in a class by itself. No other aircraft manufacturer in the world, including in the Soviet Union, is building any aircraft capable of matching it, and the line of derivatives that Boeing is planning will carry production through to the end of this century. By putting the Dash 524 into the existing Jumbo models as an alternative to the existing Pratt and Whitney JT9D and General Electric CF6 Series, Rolls-Royce would be gaining a foothold in this market, with all that this could mean in stimulating further development of the Dash 524 RB-211 to higher powers in the future as the Jumbo jet itself expands in size to 750 and then 1,000-seaters.

There are other areas where new development cash is needed, however. Rolls-Royce has plans, for example, for a new version of its famous Spey engine, the Dash 67 Mark 606, that could find a role in such prospective new aircraft programmes as the British Aircraft Corporation's Series 700 One-Eleven. Derived from the existing Spey engine, the Dash 67 Mark 606 makes use of the recent advances in technology which have been developed for later versions of the RB-211 and other Rolls-Royce engines. It is a quiet engine, which will enable operators to achieve the steady reduction in noise levels throughout the 1980s that will result from continued environmental pressures.

This whole question of providing new ultra-quiet engines for the future is also being explored by Rolls-Royce through its partnership with Snecma of France and Dowty Rotol, based on the M-43H engine and the Dowty Rotol variable-pitch fan. The U.K. Government is already helping to fund this venture, and the demonstrator engine, designated the RB-410 D-2, started a 150-hour bench-test programme this April. Derivatives of this engine, giving up to 18,000 lbs of thrust, are envisaged for ultra-quiet Reduced/Short Take-Off and Landing (RSTOL) aircraft carrying between 60 and 160 passengers, envisaged for the 1980s and beyond. It is imperative, therefore, that this programme should not only be continued, but also expanded as much as possible, in the light of the fact that the whole question of making air transport quieter starts with making quieter engines, rather than on speed-increasing sums on make-shift panaceas with existing engines, such as developing "hush-kits" for retrofitting to those engines—important as those programmes may be in the interim period.

Rolls-Royce has also launched a new twin-spool turbofan engine in the 5,000 lbs thrust class, designed primarily to meet the future requirements of the medium-size business jet market. Offering a level of economy approaching that of today's large commercial aircraft fan engines, this design is funded as a private venture by Rolls-Royce, and the first engine is expected to run before the end of this year. The design has been tailored around all the existing and anticipated legislation in the areas of noise and pollution, and it will have a specific fuel consumption some 40 per cent. lower than that of the engines which power the majority of the first-generation business jets, thereby meeting the other major criteria for future engine development—fuel efficiency. This engine will be capable of providing business jets of the

Pollution

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Hawker Siddeley HS-125 and Dassault Falcon 20 type, for example, with a non-stop coast-to-coast capability in the U.S., and also offer a transatlantic capability for a small tri-jet business aircraft. Both commercial and military roles are envisaged for the engine, including transports, trainers, light strike aircraft, and perhaps also the Remotely-Piloted Vehicle (RPV) market. Eventually, it is likely that Rolls-Royce will have to seek quantity production funding from the U.K. Government.

Another major area of concern for Rolls-Royce must now be the so-called "10 to 15 tons thrust" engine market—producing an engine of around 22,000 lbs of thrust that will be capable of matching the present rivals in this field, the French Snecma/U.S. General Electric CFM-56 and the U.S. Pratt and Whitney JT-10D. This kind of engine is likely to be much in demand in the later 1970s and 1980s for high-density, short-medium haul airliners carrying up to about 200 passengers. British Aircraft Corporation, for example, is thinking in terms of using two CFM-56s in its proposed Series 800 One-Eleven derivative, a 144-161 seat aeroplane for which a big market is foreseen.

It is probable that over the next 10 to 15 years, up to 1990, Air Show. It is not a market

market will emerge for upwards of 1,000 aeroplanes in this broad high-density, short-medium haul category, creating a market for upwards of 3,000 engines including spares. The new engines will be needed because these aeroplanes will have to operate in a totally new environment—they will have to be much quieter than anything seen before, taking account not only of existing anti-noise legislation but also of anticipated further legislation that will be even more stringent than in the past, and they will also have to be much less "thirsty" than any previous generations of engines. This is why the manufacturers have been looking beyond merely adapting existing types, to designing entirely new engines.

So far, Rolls-Royce has not got into this market with a firm development and production programme, although its major competitors are now pushing on hard down the road with the CFM-56 and the JT-10D. While it is known that Rolls-Royce has been discussing the possibilities of collaboration with Pratt and Whitney and General Electric, nothing firm has so far emerged—although it is possible that something may be said at the forthcoming Paris International Air Show. It is not a market

Rolls-Royce can afford to miss, however, nor is it a market that is going to wait. Because of the heavy development and production costs of any new engine, it is likely that both the rival programmes would appreciate some contributions in cash and kind from Rolls-Royce, with perhaps the emphasis more in favour of Pratt and Whitney than the GE and Snecma partnership. It is probably still not too late for Rolls-Royce to get some share of the production programme, if not the actual development, in either engine. In return, it has much to offer in the way of technology of its own in other areas.

Expensive

What all this amounts to is that while Rolls-Royce has a large number of existing major programmes, both of its own and in collaboration with engine manufacturers in the U.S. and overseas, it still faces a number of areas in which big—and expensive—developments will have to be undertaken if the company is to remain in the "big-league" of world aero-engine builders. The aero-engine business is never static—development is continuing all the time. But it is an expensive business—probably one of the

most expensive in the world, with any new engine costing £300m. or more to develop. But the rewards for success are equally as great. Engine spares business for the U.K., stemming from engines first designed many years ago, such as Dart turbo-prop and Avon turbo-jets, is now bringing the U.K. more than £280m. a year in export business alone, and is one of the mainstays of the entire aerospace export performance and a major contributor to the balance of payments. Money spent on developing any kind of aero-engine now is likely to produce returns for more than 20 years ahead, and should be undertaken without unnecessary penny-pinching or quibbling. Aero-engine technology is in effect the spearhead of aviation technology, for the availability of engines often determines what the aeroplane designer himself will or even can do. Since aviation technology is universally recognised to be in the forefront of all technology, often working at the very frontiers of new knowledge in such areas as high-temperature materials, for example, it follows that aero-engine manufacture is a business that should have a major claim on the resources that are available for aerospace.

Michael Donne

Equipment

CONTINUED FROM PREVIOUS PAGE

winning orders for equipment for the Boeing 747 and for the Douglas DC-10 and its display in Paris will include a diverse range of products such as mechanical, electrical and hydraulic equipment. Examples of its wide range of technology manufactured by Plessey Aerospace are a new rocket motor, integrated drive aircraft electrical generation systems and a helicopter stability augmentation system which is fluidically controlled. Plessey Power Systems will show its airfield lighting systems, a type of equipment for which there has been increased demand and for which even more is predicted. Complete

systems have been supplied to customers in the Middle East and many countries in Africa as well as for U.K. airports. It is felt that the bulk of future sales will be for export. Plessey Precision-Diac will show examples of machining, using both conventional and numerical controlled equipment, of steel aluminium alloys and titanium.

Components produced by the company range from miniature fixtures used in detail fitting, to large jigs for the construction of wide body aircraft fuselages. Diac also manufactures MRCA airframe components for Messerschmitt-Bolkow-Blohm of Germany.

American companies, eager to participate in the continuing development of the European industry, are expected to be well represented in Paris as it is clear that they too are in need of new markets outside their own country. Moreover, the organisation of their industry means they will for some years ahead maintain an advantage over European competitors suffering from fragmentation.

The role of the British industry is now blurred by two factors, the referendum and nationalisation of the major aircraft companies. The equipment industry believes it will

be some considerable time before it is seriously affected by the latter of these difficulties.

But the industry's attitude is perhaps best summed up by Sir John Clark, chairman of Plessey, who said recently that the industry Bill did not seek to build on existing institutions or develop them more effectively, but sought to impose statutory obligations on industrialists with no comparable reform from the trade unions. Such a one-sided approach would not give the transfusion of life-blood that industry as a whole needed so urgently.

Lorne Barling

LYNX

The Westland Aerospatiale Lynx, fast, agile, totally equipped, twin engined, all weather, day and night multi-role helicopter in production. Ordered for the navies of Britain, France, Holland and Brazil and the British Army. Westland 606—an executive and oil industry support helicopter, developed from Lynx and powered by twin PT6 engines

designed for multi-role capability —with orders to prove it



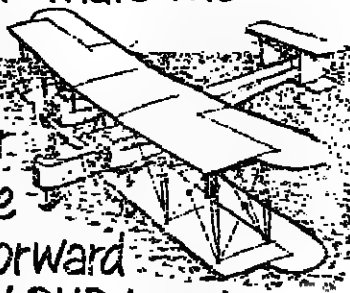
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AEROSPACE IV

European space developments

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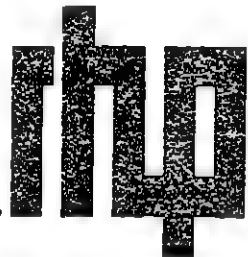


In civil aviation, RHP bearings are essential components of the engines for the most advanced aircraft including the RB 211 in the Lockheed TriStar; and the Olympus 593 in Concorde. Notable applications in the military field are in the engines fitted to the Phantom, Nimrod, Harrier, Jaguar and MRCA.

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WITH THE long-awaited establishment of the European Space Agency (ESA) now a fact—subject only to the signing of the necessary international convention later this week—the past fragmentation of European space affairs is now hopefully at an end, and a new period of concentration of money, scientific manpower and resources is about to get under way. The new ESA is taking over the existing European Space Research Organisation (ESRO), which for many years has been the principal agency engaged in the development of scientific and applications technology satellites, and the rump of the European Launcher Development Organisation (ELDO), originally set up to undertake the development of the now-defunct Europa satellite-launching rocket.

Launch

The ESA, therefore, starts its life with an ongoing series of programmes of considerable significance. These include the development of the Space Shuttle (which is intended to be an integral part of the American Space Shuttle reusable space transport system); the Ariane rocket launch vehicle that is intended to succeed the Europa series and provide Europe with its own "insurance" means of putting satellites into orbit should the U.S. ever for any reason deny Europe access to the Space Shuttle; and a wide variety of applications technology satellites that includes the Marots maritime communications satellite; the Aerosat (in collaboration with the U.S. and Canada) for communications between aircraft and the ground; the Meteosat, for recording and transmission of data for more accurate weather forecasting; and the Orbital Test Satellite (OTS) for experimental and pre-operational telecommunications and data transmission.

In addition, the ESA will have an extensive programme on scientific satellites, including the GEOS for the study of the magnetosphere from mid-1976; the International Ultra-violet Explorer (IUE), a joint ESA/U.K./U.S. project to provide an orbiting ultra-violet astronomy observatory for international use from 1976; the International Magnetospheric Explorer (IME), one of a pair of satellites (of which the U.S. National Aeronautics and Space Administration is developing the other) for studies of the magnetosphere from 1977; and the Exosat X-ray astronomy satellite, due for launch in 1979.

The broad principle under which the ESA will work is that the member-countries (France, Germany, U.K., Italy, Belgium, Sweden, Holland, Switzerland, Spain and Denmark) will collectively subscribe about £140m, a year for space activities. While each country will have the right to continue with its existing indigenous programmes (the U.K. will not, for example, put its military Skynet defence communications satellites into the ESA), it will be obliged under the convention to offer any new space ideas it may have to the ESA, with a view to them being adopted as international collaborative ventures in Europe. If the other ESA members decide to adopt those programmes, they would automatically come under ESA jurisdiction and responsibility. Should no other ESA member want to participate, however, the country originating the ideas would be free to pursue them alone if it wished.

Effectively, what the establishment of the ESA means is that the whole of Europe's space effort now gains a new sense of cohesion and direction that has been substantially lacking hitherto, notwithstanding the efforts made by ESRO itself over the past few years. It provides a unified voice with which Europe's Governments and space scientists can speak and a single central agency to deal with the vast array of commercial and industrial com-

panies operating in the space and related fields. It will enable Europe to speak on level terms with the NASA in the U.S., and in the long-term will also provide the focal point of employment for space-scientists that has so far been substantially lacking.

Some of the immediate areas of activity for the new ESA have already been outlined by Mr. Roy Gibson, the director-general. He said in Brussels recently that there ought to be a continuing rationalisation of European space programmes and facilities, so as to reduce duplication and to ensure for Europe as a whole "more space per accounting unit"—a better value for money. There is little doubt that over the past few years there has been a proliferation of companies seeking some part of the potential revenues from space activities. Some have dropped out of the race of their own accord, having discovered that the technical standards are exceptionally high, and that there is no possibility whatsoever of rapid profits, although in the longer-term much of the knowledge gained from work in space may be applicable as "spin-off" in other directions.

Efforts

Secondly, as part of the overall rationalisation of European space efforts that must follow the establishment of the ESA, there will have to be a coherent industrial space policy, and member-governments will have to accept that some of their present industrial companies participating in space will have to drop out. On the budgets that the ESA will have provided for it by member-states, it will not be possible for every company working in space to get an adequate share of the cake, and it will be better in the long run if governments and companies recognise that a smaller number of highly-skilled companies working in the field will be better than a large number of less-skilled

organisations fighting for a few crumbs of comfort in the way of space contracts.

As a corollary to this, however, there is little doubt that the ESA foresees the day when applications-satellites, initially devised by ESRO or the ESA, come forward as marketable commercial systems world-wide. Just how far it will be part of the ESA's task to help those industrial companies to win contracts for the supply of systems world-wide still has to be worked out. Indeed, there is also the question whether the ESA itself should even become the owner and/or manager of operational satellite systems (for example in telecommunications or weather forecasting) derived from satellite concepts devised and developed by itself.

Already, for example, efforts are being made by many countries with substantial merchant shipping fleets to establish through the Inter-Governmental Maritime Consultative Organisation (IMCO) some kind of organisation to own and manage maritime communications satellites. A conference on this subject was recently held in London, but did not achieve final results, and it is likely that a substantial amount of work will still have to be done before any "Inmarsat" organisation finally emerges. But in addition to maritime communication satellites, there are plans for more weather satellites (the Meteosat), and for aeronautical communications satellites (Aerosat) and perhaps also eventually various regional telecommunications satellites (Regiosat). Each of these is likely to need some kind of international organisation to run it, and in particular to collect revenues. What has to be established is whether the ESA, as the research and development organisation, should also become involved in managing such operational satellite systems.

Another point stemming from this is that the ESA may well become a useful vehicle whereby the member-states can voice their views on future satellite

activities in the international forums that either already exist or are likely to be set up in the future—Intelsat, Inmarsat and so on. At present—and the recent Inmarsat conference in London was a case in point—the various member-states of the ESA all send delegations to the various international conferences and express their views, involving the expenditure of immense time and effort. It might be more economic in both time, money and resources if the member-states of the ESA were to conduct their discussions on such matters through the medium of the ESA itself in advance, and then send the ESA itself to the conferences with a specific mandate on what member-states want to see achieved. Such a devolution of authority from individual countries' civil services or bureaucratic procedures to the more knowledgeable and practical staffs of the ESA might cut down substantially the time it takes to get new international space organisations and ventures off the ground in future, and make European space activities more competitive.

Struggles

Beyond all this, the creation of the ESA ensures that existing space programmes in Europe, often only initiated after immense domestic political struggles, will not be merely ends in themselves. Probably the most valuable effect the ESA will have is that of creating continuity in European space efforts, and putting an end to the "stop-go" situation that has plagued so many of the specific ventures conducted in individual countries in the past 20 years, and which has resulted in such a waste of money and technical resources. Continuity, cohesion and continuity. It is to be hoped, will now replace past fragmentation, dissipation and disillusion where European space is concerned.

Michael Donne

Electronics and avionics

WITH British avionics manufacturers now becoming more aware of the possible implications of a nationalised aerospace industry, many feel that too little has been done in the past to make more impact as a successful and independent industry.

The high proportion of avionics equipment in an aircraft—often more than a third in value—makes it an important consideration, certainly equal now to that of engines, which tend to get considerably more political attention. Furthermore, it is sometimes forgotten that the ability to supply avionics for new aircraft programmes all over the world has far-reaching advantages. First it enables technological leadership to be maintained against the challenge of international competition, a vital factor in enabling the country to serve its own aircraft industry and for its defence. Secondly, it is a valuable source of export business in an important technological field.

The world avionics business could exceed £10bn by 1980 and the United States still dominates the market with around 85 per cent. of business, but British companies have held their own in recent years and continue to win some of the most sought-after contracts.

These contracts are increasingly valuable as modern aircraft depend more and more on avionics and are manufactured in greater quantity to reduce unit cost. Among the most urgent defence requirements, a number can be readily identified, the first being fly-by-wire systems. These continuously control the relationship between the pilot's control column movement and the resulting manoeuvre by means of digital computers and data transmission to provide safe and stable handling qualities for advanced-performance aircraft.

Second, Marconi-Elliott Avionics contends, is the need for helicopter avionics which must be lightweight, reliable and easy to maintain and carry out an increasing variety of functions which include advanced flight control, tactical communications and looking and more accurate instrumentation for operation under adverse conditions.

Maritime aircraft systems, for long-range maritime patrol aircraft and helicopters, are seen as a rapidly developing market while there will certainly be a long-term need for navigation, weapon aiming and display systems for all-weather strike and 24-hour interception operations.

Advances

Significantly, technological advances such as fly-by-wire have considerable influence on the design of airframes, leading to earlier and more extensive co-operation between various contractors on programmes such as the Multi Role Combat Aircraft. This trend is likely to continue, although avionics manufacturers are wary about being drawn too far from other sections of the electronics industry towards the airframe and engine manufacturers.

But in the longer term, whether the airframe industry in the U.K. loses, or benefits from nationalisation, and whether the U.K. remains in

the EEC or not, collaboration appears to be the only rational course if the often massive development costs of aircraft are to be recovered and any profit made. That is perhaps best illustrated by the fact that the U.K. with the largest single aerospace industry in Western Europe, currently has no major civil aviation venture of its own.

The avionics industry, firmly based on the larger electronics industry and experienced in working with aircraft manufacturers world-wide, also finds itself drawn between commitments in the United States and in Europe. At the moment it is not unusual for one supplier to have equipment in two competing aircraft, and many manufacturers regard this as healthy competition which they would wish to continue.

But a number of companies have achieved a wide spread of customers, such as Marconi-Elliott, which supplies almost all major aircraft manufacturers, operators and defence agencies in Europe and the U.S. It has systems currently operating in more than 100 different aircraft types.

Among the U.K. industry's major successes which will be seen at the Paris Air Show is Ferranti's Seaspray radar for the British naval version of the Lynx helicopter and the Maritime Harrier, and its MRCA equipment, the digital inertial navigator, combined radar and map display (with AEG as subcontractor) and for the laser ranger and marked target seeker. It is opportune that production go-ahead for the Seaspray has been given recently.

Smiths Industries will show its range of electronic head-on display systems chosen for MRCA, Jaguar and other aircraft, and other equipment such as radar altimeters, fuel gauging and flight control systems used by more than 450 airlines and air forces.

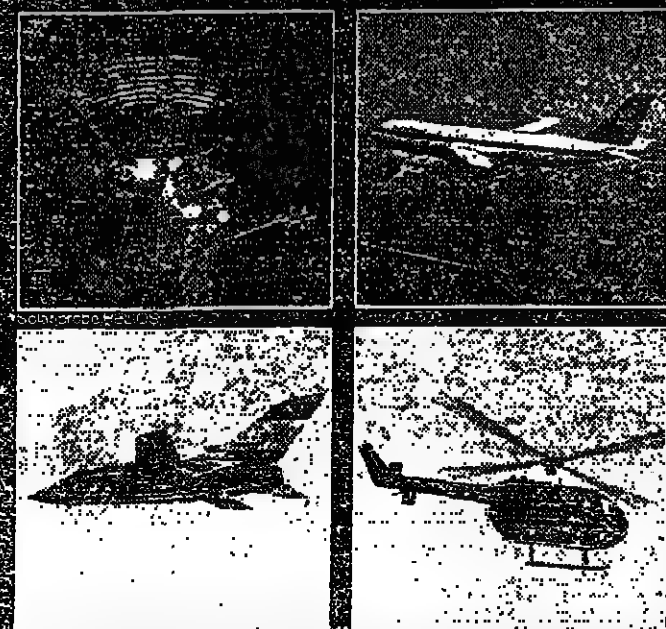
Plessey Navals, which since its formation just over a year ago has won orders approaching £10m, nearly all for export, will stress in its presentation at Paris its ability to provide com-

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The Concorde 01, seen at Nairobi recently during the flight-test programme.

Airlines' fortunes at a low ebb

OVER THE past year and a half, the world's airline industry has been passing through its worst economic crisis ever. The reductions in seating capacity made during the winter of 1973-74 directly as a result of the Arab oil embargo have been maintained and even extended subsequently as a result of the declines in traffic stemming from the industrial recession in the main air transport generating centres of Western Europe and North America. At the same time, fares have been raised extensively in order to meet not only soaring fuel bills—now generally three times what they were in the autumn of 1973—but also other inflationary trends. These increases in turn have helped to depress traffic, with the result that the airline industry's collective economic fortunes are now at an extremely low ebb.

It would be pleasant to be able to bring some ray of hope into this gloomy situation, but this is impossible. While in some parts of the world it is possible to find airlines and routes where traffic is comparatively buoyant—and this is especially the case on some long-haul routes, for example, between Europe and the Far East and South America—in others, such as Western Europe and the U.S., the situation in the first quarter of this year was one of either zero growth or even of a decline in traffic volume and worsening financial results.

Cheap

For the longer-term, no one in the world air transport industry seriously doubts that better times will eventually emerge, and that once the world's economic situation in general improves, the fortunes of the airlines will move up with it. That there is still a significant demand for travel is continually demonstrated by the success of cheap holiday and other fares plans, and it seems clear that if the airlines can develop these schemes in the years ahead they will be able to reach markets that have hitherto been closed to them.

But even with such renewed expansion, however, it seems clear that the rates of passenger traffic growth enjoyed by the airlines in the boom years of the 1960's, sometimes averaging as much as 12 to 15 per cent a year, have gone for ever, and that a much lower rate of about 5 to 8 per cent at most can be expected. In itself, this is hardly a disaster, for many other industries have existed profitably for many years on annual expansion rates of even less than this, and have regarded themselves as fortunate. The airline industry will have to readjust its thinking to cope with this situation, but there is no reason to assume that it will not be able to do so.

It is the immediate future that gives most cause for concern, however, with virtually all these measures through 1975 and well into 1976.

There are other areas, too, which so far have only been explored by the industry in a comparatively limited way, but which will have to be considered in much greater detail if the airlines are to achieve any lasting improvement in their economic health. One of these is the principal of international collaboration, combining into groups not only for the procurement of common types of aircraft but also for their engineering maintenance. This is already well evidenced by the existence of two major groups on the Continent, the Atlas group that includes Air France, Alitalia, Sabena and Lufthansa, and the KSSU group, which includes KLM of Holland, Scandinavian Airlines System, Swissair and Union de Transports Aériens. So far, neither of these groups has gone as far as the original idea of "Air Union"—a complete integration of operations—first mooted several years ago and there is no evidence that they will ever do so, since nationalistic aspirations will probably always preclude the complete submergence of individual identities into a

bigger international airline conglomeration. But, so far as they go, these groups have helped to save their member airlines substantial sums of money on equipment procurement and maintenance, and promise to continue doing so.

Both Atlas and KSSU, however, have also led the way towards a clearer identification at an early stage of airline requirements for new transport aircraft—the Atlas group's interest in the European Airbus is an example. Although this trend has not yet reached the stage where the airlines themselves collectively formulate their specifications at an early stage and then pass them to the manufacturer to turn into an aeroplane, that situation may not be so far away. Most of the major airlines in Europe, including British Airways, have already had informal discussions on their likely aircraft requirements for the 1980s and beyond, both among themselves and with the aircraft manufacturers, and it is possible that within Europe a suitable specification may yet emerge that can be converted into an aircraft by a consortium of European aircraft manufacturers, or at least to break at least in one sphere of individual identities into a

high-density operations—the dominance of the U.S. manufacturers. What does seem clear is that the current U.S. dominance in other areas—the long-haul high-density Boeing 747 Jumbo jet, and the medium to long-haul high-density trijets such as the TriStar and DC-10—is unbreakable.

Liaison

It is difficult to see how any consortium of European manufacturers, even supported with substantial government funds and strong European airline interests, could ever expect to catch up with those aircraft. But the basis for a family of short to medium-haul high-density aircraft does exist in the European Airbus, which ought to be exploited and developed vigorously. This can only be done, however, with the full support and encouragement of the airlines, so that one of the major requirements for the future in Western Europe must be a much closer liaison between the airline industry and the aircraft manufacturing industry from the very earliest stages of conception of new civil aircraft ventures. Such a development could only be beneficial to all involved in the aerospace and

aviation community.

The whole question of inter-airline co-operation world-wide must also be closely examined, so as to ensure that some of the current abuses and debilitating practices that cost the industry millions of pounds a year are discontinued. Breaches of fares regulations through rebates and discounts have been a cause of concern to many airlines for a long time, but there are now welcome signs that the industry, through its trade association, the International Air Transport Association, is seeking to put a stop to this.

Another sign of the industry's recognition of the need for closer collaboration is evidenced by the growth of new associations. One good example is the Arab Air Carriers' Association, which links together all the major airlines of the Arab world, and which is now increasingly speaking with a coordinated voice on Arab airline aspirations and requirements, especially on such matters as fares, routes and equipment procurement. It will probably never be possible to achieve agreement in the world airline industry on all that needs to be done to improve the collective economic situation of the industry, not only because there are

so many different airlines but also because of the wide disparity of national attitudes they represent.

This wide diversity of views among governments, political, social and economic, causes the world airline industry some considerable problems, and one of the points made strongly by the IATA itself in recent years is the need for governments to agree more frequently among themselves on the regulation of the industry. For without a coherent pattern of government control it is impossible to expect the airline industry to achieve the improvements in the quality of service and economic health that are required.

Fuel bill

One final aspect of this need for governments to devote more attention to the requirements of civil aviation is evidenced in the fuel price situation. Fuel costs now generally account for about 24 per cent of total airlines' operating expenses, and even as much as 30 per cent for some airlines, against 11 per cent in 1972-73, and the additional fuel bill that carriers have had to absorb is \$2,192m. in 1974-75,

rising to \$2,857m. by the end of 1976. At present, some governments control the price of fuel for consumption within their own states—such as for cars—but the prices for fuel for public-service aviation at international airports, although only representing 4.5 per cent of total consumption, have been largely ignored. This has encouraged some fuel suppliers to seek to compensate for profit restrictions elsewhere by putting up the price of aviation fuel. The airline-members of the International Air Transport Association, therefore, have called for tighter government measures to prevent this, and have pointed out that total fuel costs to the airlines could be reduced considerably if all governments observed the policies recommended by the International Civil Aviation Organisation and ensured that fuel and lubricants for use on international flights were supplied free of customs duties and other taxes. The airlines feel strongly that while they have been undertaking a wide range of fuel conservation measures themselves, saving millions of gallons a year, governments have done little to help.

Michael Donne

Electronics

CONTINUED FROM PREVIOUS PAGE

plete airport equipment as a package deal. The company, contractor for the British Government to develop a joint venture, a system proposed by the U.K. to meet ICAO requirements for an acceptable Microwave Landing System, has completed a prototype which will be on show in Paris.

The Sperry Rand Corporation will display computers widely used by airlines and for the worldwide communications network for airlines, automatic flight control systems and a wide range of its products.

The showpiece of Marconi-Elliott's products will be the newly developed PERI-HUD, being seen in public for the first time. This has been designed in response to the problem, with many types of aircraft which lack the instrument panel space needed to install the conventional HUD. This has been overcome by mounting the display unit on top of the instrument panel and using periscope optics to give an uninterrupted view to the pilot.

Another new development is the helmet-mounted sight, a head-up display in miniature, which is effective over a wide range of head movements. In addition, threat warning information can be displayed immediately to the pilot regardless of where he is looking.

Last but not least, Marconi will show its improved automatic throttle-control system for the Boeing 747, ordered by the company, and now under development. The system will automatically control airspeed and other parameters to reduce pilot workload, particularly during descent, holding, approach and landing phases of flight. Once the development is completed, it will become part of standard automatic flight control installations on newly built 747s.

The system has a number of advanced optional features to meet with current and anticipated airline requirements. These include the ability, with minor modifications, to compensate for engine dynamic differences, to work in conjunction with advanced engine protection systems, such as total air temperature-engine pressure ratio systems.

Jointly

Returning to the U.K., one of the more interesting developments almost coinciding with the show is the formation of Flight Navigation, a new company owned jointly by Decca and Smiths Industries. The aim is to use the experience and expertise of the two companies to support the development and production of aircraft systems combining automatic control, navigation and display technologies.

It is apparent that the company covers all the disciplines needed for success in this area including aerodynamic thrust control, navigation aids, display systems and the human factors concerned with the pilot-machine interface. The company has recently been awarded two important contracts in this area. One is for the Ministry of Defence in support of the Royal Aircraft Establishment's flight systems division and the other to assist the CAA to determine the effects of improved air and ground navigation aids of the flight path performance of transport aircraft.

The new company is seen as an attempt to harness the resources of the two parents to produce advanced, and cost effective systems which will find favour with both civil and military aircraft operators both in the U.K. and abroad.

Lorne Barling



London Heathrow Airport (British Airports Authority photograph)

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AEROSPACE VI

Private aircraft business picks up

THE OPERATION of business aircraft has in the past year come under considerable scrutiny as a result of the steeply rising price of fuel and other inflationary cost increases, but not all the worst fears expressed by operators have so far come about.

Although the level of aircraft usage and demand for air taxis fell during that period, activity has since returned to near normal levels, although the industry is experiencing little or no expansion at present. It is felt that the parallel increase in the price of fares on scheduled flights, and route cutting, has brought home to many operators the value of private aircraft.

Nevertheless, many companies have carried out stringent cost examinations of their operations and begun monitoring flight programmes far more carefully. Although few have sold their aircraft, it is felt that the worst of the economic crisis is yet to come and future emphasis will be on efficient use. Nevertheless, if the aircraft have been bought and used for the right reasons, they will continue to be valuable.

Necessary

According to the chairman of the Business Aircraft Users' Association, Mr. Angus Charrington, many of its members have decided that private aircraft are necessary, just as cars or other vehicles, but that usage should be carefully watched. But the drastic cutback during the last months of 1973 had been too severe.

The operation of Basa Charrington's two aircraft, a Cessna 401 and a Cessna 421, is perhaps typical of private aircraft use in British industry, with the company's interest widely spread between Scotland,

Ireland, Wales and Belgium, the aircraft have been kept fully occupied carrying employees between them. But now it has been decided that the older of the two aircraft will not be replaced and the company is making do with four pilots instead of five. In better times this would probably not have been necessary.

Another factor which private operators regard with some alarm is the increase of VAT on private aircraft to 25 per cent., which many believe is evidence that the Government continues to look at private aircraft as a luxury. Although some concern has been expressed at the effects this will have on sales of U.K. made aircraft, Hawker Siddeley, manufacturer of the successful HS-125, believes it is too early to become pessimistic. With 336 of the aircraft now sold, it is likely that the company's marketing efforts will now be concentrated on overseas sales.

With the U.S. markets fairly flat at present, Hawker Siddeley is looking towards the Middle East, Africa and South America for a higher proportion of its future sales and believes that if the HS-125 can be developed to keep pace with competitive aircraft, its future is assured.

The company has noticed a trend towards greater turnover in the secondhand aircraft market, although it regards this as beneficial in some ways. For example, if an HS-125 is sold by a British company to a Third World country it is quite possible that that country will build up a fleet of aircraft, as have Brazil and Malaysia. Hawker is confident enough in its product to believe that the more widely it is seen and used, the more it will be appreciated.

Looking at the situation in North America, manufacturers have had to curtail production

of business and light aircraft, but demand has picked up enough in recent months for the industry to predict that output this year will be greater than in 1974. The ability of the industry to hold up so well during economic stress has surprised many companies.

Ambulance

Beechcraft has reported that international sales rose by 34 per cent. in 1974 compared with the previous year and 1975 sales are up 33 per cent. over the same period for 1974. It believes that international markets are gaining strength, particularly in the field of ambulance work, photography and for civilian and military pilot training.

The company predicts a continuation of this growth as economic development brings with it the greater need for mobility and has consequently strengthened its marketing network geographically and in the number of sales and service outlets covering high-growth areas.

As in the U.K., it appears that the effects of the oil crisis on the North American market have not been wholly detrimental. It is suggested that the speed limits for road travel and rising fuel prices which resulted in airlines last year reducing schedules by more than 1,200 flights on the average day and more than 400,000 flights annually to conserve fuel, have worked in favour of private business travel.

Should fuel prices continue to rise, which seems likely in the long term as the administration seeks to reduce imports, it could give added impetus to business flying. There is also evidence, according to industry sources, that the high loads being carried by airlines could also stimulate the purchase of business aircraft.

There is speculation whether this has contributed to the fact that in the United States there are more and more first time buyers of business aircraft, particularly in the piston-engined class. There is also a significant number of operators of this type of aircraft which are upgrading to turbine powered. In the case of the Cessna Citation around 27 per cent. are now being sold to operators who previously owned Cessna 421s.

The company believes export prospects remain strong, although it expressed the opinion that the United King-

dom, Italy and France had become less favourable markets. Scandinavia, the Netherlands, Germany and Australia looked good this year. Beechcraft has also reported strong demand for its aircraft, particularly the Super King Air on which it is working off a backlog of orders.

Similarly Gates Learjet is stretched to complete 85 aircraft on order, although reports a fall in new orders which it attributes to delays in getting its new turbofan-powered Model 35 and 36 into production. It is now seriously looking at ways of increasing production capacity.

So with both American and British manufacturers of business aircraft clearly looking at export markets, mainly outside Europe, for a slice of future growth, what of the domestic prospects? It seems clear that if the economic indicators prove correct, the U.K. will provide a very limited market both for sales of business aircraft and air-taxi work for some time to come.

Nevertheless, as McAlpine Aviation has noticed, the country's export drive has continued to provide business to the rest of Europe, the Middle East and other major trading areas.

The North Sea oil activities still provide the company with between 10 and 15 per cent of its business and it estimates that this year will be comparable in many ways to 1973, before the oil crisis. The urgency with which businessmen need to do business abroad, according to McAlpine, has a significant effect on its level of business. Nevertheless, the picture for the U.K. as a whole, both as buyer of aircraft and as a market for air taxi operators, remains uncertain.

For that reason it is perhaps opportune that the General Aviation Manufacturers' and

Traders' Association has just been formed, with 36 members which include Rolls-Royce, Britten Norman, Sperry and representatives of French and American manufacturers.

The main aim of the organisation is to act in the interests of the general aviation industry, in both private and business sectors. It intends to do this by working to keep airfields open, keeping taxes down and playing an informative role. Furthermore it will actively promote the sale and use of aircraft.

Lorne Baring

Crucial time for supersonics

THE NEXT six months could be decisive for the future of the Anglo-French Concorde super-

sonic airliner, for in that time will be determined much of the pattern of operations when this twice-the-speed-of-sound airliner enters fare-paying passenger service early next year. Of the 16 production aircraft so far authorised by the two governments, four have flown (bringing to eight the number of Concorde aircraft to date, £131m. by the U.K. and £112m. by France) by 1976-77, including the two prototypes and the two pre-production aircraft, with two more production aircraft due to fly by the end of this year. By the time British Airways and Air France start the first fare-paying passenger services in early January to Bahrain and Rio de Janeiro respectively, each aircraft should have taken delivery of two aircraft, enough to guarantee regular services on the limited scale initially is the 350 hours of "endurance envisaged, building up later as flying" by the makers and the

both deliveries and route approvals multiply.

At this time, the long development period of the Concorde, from the conception of the programme in November, 1962, and involving the outlay of £833m. by the end of 1964 (£436m. by the U.K. and £417m. by France) is nearing completion. At the end of 1974, another £243m. remained to be spent (£112m. by the U.K. and £131m. by France) by 1976-77, when the development programme ends, making a total development cost of £1,096m. By the end of April this year, the overall flight test programme had reached nearly 4,000 hours, involving over 1,820 flights, of which over 1,200 hours in more than 1,000 flights had been supersonic. With most of the detailed flight task remaining for this summer the limited scale initially is the 350 hours of "endurance envisaged, building up later as flying" by the makers and the

airlines, aimed at proving the aeroplane in its airline configuration, ready for the award of the vital Certificate of Airworthiness some time this autumn. This endurance flying will consist of a series of long-haul flights from the U.K. and France to many parts of the world, including those to which fare-paying passenger services will be flown next year, carrying representative airline loads under full airline operating conditions. These flights—to Rio de Janeiro, New York, Washington, Bahrain, Singapore, Hong Kong, Tokyo and Sydney or Melbourne, will not only be used by the airlines and the manufacturers (British Aircraft Corporation and Aérospatiale) to complete the flight test programme and iron out the details of airline operations—complete the training of flying crews, cabin staff and ground engineering and other handling staff, such as catering and baggage

loading personnel—but also by the civil aviation authorities of the overseas countries concerned as a means of assessing public attitudes to the whole concept of supersonic airliners.

Criticism

There has been much criticism of supersonic flying in general, and of Concorde in particular, over the past few years, especially from environmental lobbies who have attacked the overall concept on the grounds of potential stratospheric pollution, and Concorde itself on the ground of the noise it will make while approaching and leaving major airports such as Kennedy (New York), Sydney and Tokyo. Efforts by the manufacturers, and more recently also by the airlines, to allay these fears have not yet been as successful as the U.K. has carried out, especially by

and French Concorde, passengers would have liked. It is clear that during the past few months there will be a continued, concerted attack by the anti-supersonic lobbies worldwide, not only to prevent the start of fare-paying passenger services next year but also even to halt the preliminary endurance flights scheduled for this summer. It will require all the publicity skills as well as the diplomatic efforts of the airlines, manufacturers and U.K. and French Governments to break down this summer's prevailing image of Concorde as a noisy, polluting monster, and to substitute instead the image of an aeroplane that is capable of fitting into the existing world air transport system with the minimum of disruption.

A substantial amount of work already in this direction has already been carried out, especially by

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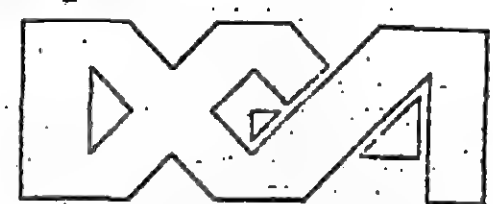
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AEROSPACE VII

A breathing space for cargo sector

ONE FACT that emerges from any assessment of the air cargo industry at the present time is that it has run out of steam. This is probably no bad thing, because it has been apparent for some time that what has been needed most by those within the airline industry who have developed air cargo to its present level of sophistication is a brief period to regain their breath and to take stock.

For it is not much more than fifteen years ago that the airlines took a really serious look at the economics of cargo carrying and realised its potential as a revenue earner. The outcome has been the progressive separation of cargo traffic from passenger-orientated procedures and management into what has become a vast satellite industry in its own right, supported by fleets of specially-built cargo aircraft, specially-built terminal buildings and warehouses equipped with the most advanced types of handling systems—much of it automated—armies of clerical and manual workers specially trained in international requirements and procedures controlling the movement of goods between one country and another, and a fast-developing communications and computer network designed to provide an interchange of information on a global basis.

Potential

The speed and energy with which all this has been accomplished has been such that the industry has had little opportunity to pause and consider just where it is heading and what needs to be done to maximise its revenue-producing potential. The fall-off in cargo traffic carried by the scheduled operators, which set in towards the end of last year and has continued ever since, provides the opportunity for just such a stock-taking—not just in cargo, but throughout the airline industry as a whole.

The most urgent need, it is to isolate and set-up, the factors responsible for the continuing rise in losses reported by almost every scheduled carrier. Not all of them can be blamed on inflation or on the world economic situation, and where this is so, the airlines appear to be either unwilling or reluctant to apply a little self-help.

The most obvious example of this is the over-capacity with which they are saturating

certain routes, of which the North Atlantic is the classic example. Here, the number of flights is totally unrealistic. Figures issued by the International Air Transport Association (IATA) for passenger and cargo traffic carried over the route during the past two years show that the demand simply does not exist for flights that have been, and continue to be, operated.

Last year, for example, the 22 international airlines then operating on the route mounted 66,658 passenger flights together providing over 16m. seats—and yet no more than 9,34m. of them were occupied. This means that for every 240 seats provided there were only 140 passengers. This is difficult to understand at a time when the airlines are facing the most serious financial crisis in their history.

So, during the breathing space that the lull in cargo and passenger traffic has provided, the first priority would seem to be to get to grips with over-capacity. Once supply is matched to demand, the next task must surely be a complete overhaul of the IATA cargo rate structure.

This is currently under review at Cannes, where senior cargo executives of the international airlines of IATA are attending their bi-annual composite cargo conference, at which the rate structure is the major topic. If discussion on rates follows its usual course at this year's conference, it is expected to develop into a power struggle between the major carriers operating large-capacity aircraft—mainly the wide-bodied types—and the smaller airlines, whose pattern of operations do not require them. One of the difficulties in such a situation is that while the major carriers are usually in agreement of the principal changes that should be made to make air cargo more attractive to shippers, the smaller carriers, who are not so deeply involved in cargo and are therefore less experienced in it, tend to gang-up against the "big boys" in the business, preferring to leave matters as they are rather than agree to changes from which they are unlikely to benefit.

Bigger aircraft with greater cargo capacities coupled with the big terminals and costly equipment and other ground facilities that are required to handle them has made a complete overhaul of the rate structure imperative if the full

potential of cargo is to be exploited to provide the additional revenue the airlines need. The structure was formulated originally in 1946, when cargo sent by air consisted mainly of urgent parcels weighing no more than a few pounds, with an occasional package of perhaps 100 lbs or 45 kilos, which today is the minimum weight (it was then the maximum) to which nearly all the rate permutations are geared.

Handling

With the high-capacity aircraft now dominating most of the world's air routes, the airlines have found that it is no longer economic to carry small, low-weight consignments. The revenue they generate does not even cover ground handling costs, and unless they are consolidated with other packages of similar weight and loaded on pallets or in containers by forwarding agents, the major airlines would prefer not to carry them.

Because of this, there is to be a concerted effort at the Cannes conference to obtain agreement on the abolition of the 45-kilo break-weight, as it is called, and to replace it with a much higher weight, which the major airlines would like to see at somewhere between 500 and 1,000 kilos. It is at this minimum break-weight that shippers start to receive discounts on what is known as the general rates for consignments and on the special rates which apply (and there are literally thousands of them) to specified commodities. If the airlines can agree to raise the minimum weight at which discounts start to apply to, say, a ton (1,000 kg.) they estimate that there would be a dramatic response from the forwarders with a corresponding increase in traffic.

But this would not suit the airlines operating smaller types of aircraft with limited cargo space, which in many cases would not accommodate individual loads of the weight the larger carriers are seeking. And this could—as on previous occasions when attempts have been made to increase the minimum weight—produce a stumbling block at Cannes.

Another area which is causing a good deal of concern to the scheduled carriers and which will undoubtedly come in for discussion at Cannes is the increasing volume of cargo that the forwarders are now divert-

ing to the independent charter operators. In the U.K., in particular, this is proving a major problem to the international scheduled carriers. It has been aggravated by the recent decision of the Civil Aviation Authority to remove the restriction on the number of consignments whose goods may be carried on a chartered aircraft, and its intention to remove at the end of this year the present restriction on the minimum weight (currently 1,000 kg.) of each consignor's shipment.

These moves, and the CAA's decision to allow the charter operators a virtually unlimited number of flights so long as they can justify demand, mean in effect that from next year they will be free to operate more or less on a par with the scheduled carriers, but without the same massive overheads and operating expenses which scheduled services entail. In some respects, the combined operations of the charter operators might come to be regarded as providing the "second force" air service advocated in the report of the Edwards Committee six years ago, even though not operating exactly on the lines envisaged by that committee.

Competition

With this prospect in view, and the increasing competition it will bring, it seems inevitable that the IATA airlines will be compelled to devise some kind of acceptable formula under which they will be able to enter the split charter market, if only to utilise the surplus aircraft capacity which nearly all of them have at present as a result of the continuing fall-off in traffic. To do so would also enable them to re-establish their hold upon the major forwarders whose attentions are gradually being turned to the charter airlines, albeit indirectly, through companies most of them have formed specially to handle charter traffic.

There is little doubt that in the rapid and widespread changes that have taken place in the pattern of cargo operations in recent years, coupled with the decline in both passenger and cargo traffic, the scheduled airlines are facing formidable problems. Only by pausing, consolidating their resources and agreeing to adopt common policies, are they likely to achieve the full benefits that cargo can bring.

Peter Hering

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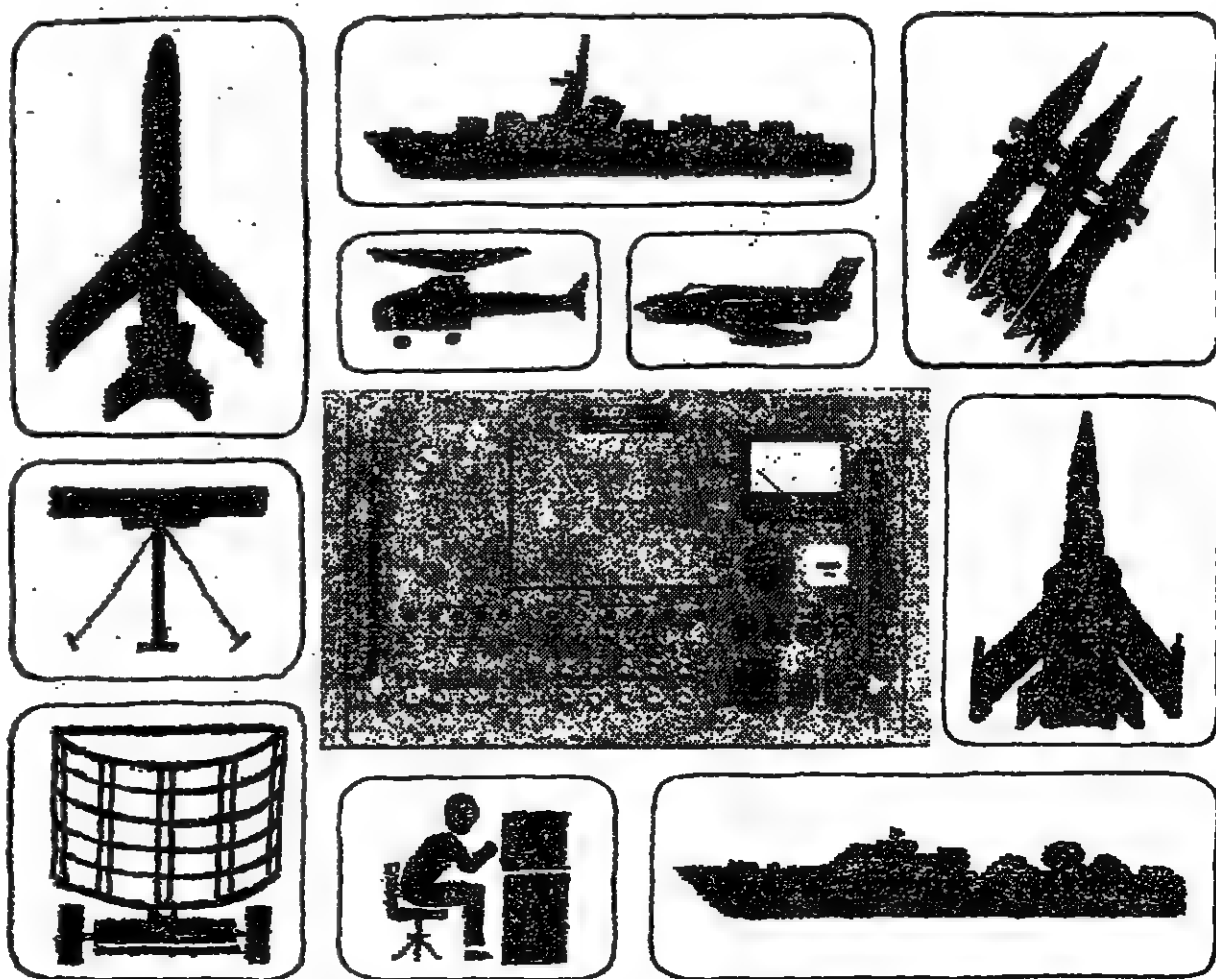
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Michael Donne

Supersonics

CONTINUED FROM PREVIOUS PAGE.

the manufacturers. Concorde has already visited 60 cities in 39 countries, including ten airports in the U.S., during the course of its flight test and demonstration programme to date, and while it is true that there have been substantial criticisms many of these have been founded more on fiction than on fact, and have been allowed to develop almost into a condemnatory mythology concerning Concorde. It is this damage that has now got to be redressed. It is not going to be an easy task, but it will be well worth doing, for upon its success or failure depends the entire long-term future of the aeroplane.

A good deal depends upon the attitudes adopted in the U.S. by the Federal Aviation Administration, upon whose recommendations the final approval for Concorde to operate into and out of that country will depend. Already, the FAA, in pursuance of the legal requirements under the National Environmental Policy Act of 1969, has held public hearings in both Washington and New York into the environmental and noise aspects of Concorde operations at Dulles and Kennedy Airports. These hearings were taken seriously by the U.K. and French governments, British Airways and Air France and by the Concorde's makers, and the statements submitted in writing, together with the oral evidence given at them, undoubtedly went a long way towards correcting much of the emotional attack directed against Concorde by some of the environmental lobbyists.

Emotion

The view taken on this side of the Atlantic is that provided the Concorde is considered dispassionately, it is likely that its case for being allowed to operate limited services to Dulles (two a day) and Kennedy (four a day) will be able to meet as reasonably soon upheld by the FAA when its

final Environmental Impact Statement is issued soon.

Unfortunately, however, it cannot be taken for granted that fact will be permitted to override emotion, and a continued effort by all parties will be necessary to ensure that a decision favourable to Concorde is taken.

In the meantime, production of the aircraft has been slowed to ensure that manufacture and assembly can be kept ticking over pending the inflow of orders—which the makers are confident will come once the aircraft has entered airline service. With five aircraft firmly ordered by British Airways and four by Air France, this leaves seven Concorde out of the 16 authorised still to be sold. Currently, negotiations are in progress with Iran Air on an order for three aircraft, while the Civil Aviation Administration of China also holds options on three aircraft. If these are taken up, one Concorde will remain to be sold.

Orders

The manufacturers are not expecting any further firm orders beyond these (on the assumption that Iran Air and CAAC confirm their options this year) until fare-paying passenger services have shown the world's airlines just what Concorde can do. But they remain convinced—and there are signs that many airlines are now also coming to recognise this—that the advent of Concorde services will revolutionise the first-class traffic on the routes the aircraft flies, and that within a year or so of the start of operations there will be new divisions in the world air transport industry—between those airlines which have Concorde and those which do not.

The makers feel that this is likely to give rise to a new pressure of demand for Concorde, which they want to be able to meet as reasonably soon as they can. To do this, it will

be necessary to keep the Concorde production line intact, so that it can be accelerated when the orders arrive. It is questionable whether they can maintain this situation throughout the whole of 1975, for some of the very earliest parts-fabricators in the production chain are already running out of work, and by the latter part of this year will be needing the stimulus of new orders to encourage them to remain in the programme. It is at that time, therefore, that the makers may well have to ask the two Governments for permission to build the next three aircraft, for which the ordering of long-dated materials has already been approved. Whether the Governments will feel able to justify the expenditure involved will depend entirely upon the date of the order book—or at least upon the attitudes towards Concorde prevailing world-wide.

If, by then—say about October-November—with passenger services imminent Concorde has come through its endurance flying without mishap, has won its Certificate of Airworthiness, has managed to win round some of the present objectors and has begun to convince many of the airlines that the supersonic era is here to stay, the two Governments may well feel that they can authorise further spending on more aeroplanes, even in anticipation of orders. This would be the biggest single gesture of confidence the Governments could make to help the start of fare-paying passenger services to Rio de Janeiro and Bahrain early in January, followed by services across the Atlantic to New York in April (subject to the necessary foreign government approvals having been obtained).

It is thus towards this goal that everybody associated with Concorde will be working this summer. For what is really now clear is that Concorde will go into service, somewhere in the world, early next year. What is not yet so clear, but should

become so over the months ahead, is just how far this start to supersonic passenger operations can be exploited so as to ensure that it does not fizzle out through apathy on the part of the travelling public or the airlines, or through objections on the part of environmental minority groups. This is why everything that is done in the months ahead will be so vital to the project's long-term future.

Activities

Just how far the activities of the Soviet Union's TU-144 airliner will help contribute to the overall start of the supersonic era is far from clear. At this time, it is believed that the aircraft will enter service on flights across the Soviet Union between Moscow and Khabarovsk some time early in 1976—about the same time as Concorde. The Soviet Union is also expected, in discussions with the U.K. and France this summer, to press for reciprocal rights for the TU-144 beyond London and Paris to the U.S. and other parts of the Western Hemisphere, in return for rights to fly the Concorde between Western Europe and the Far East across the Soviet Union via Novosibirsk. It is not clear at present where the TU-144 will fly outside the Soviet Union, apart from operations to Western Europe and across the North Atlantic. But it seems obvious that sooner or later the Soviet Union will want to introduce this airliner to destinations in Africa and South-East Asia, if not also to South America. This can only help promote the overall development of the supersonic transport era, and ensure that it comes to stay. As with Concorde, therefore, the next few months will be among the most critical for the TU-144, with much more being heard about it world-wide.

AEROSPACE VIII

Improved quality of Soviet industry

AEROSPACE DEVELOPMENTS in the Soviet Union have for long been a substantially closed book to the West. Only occasionally have top-level industrial or Ministerial delegations been permitted to visit selected Soviet aircraft manufacturing facilities—notably those involved in the TU-144 supersonic airliner—while military facilities have been kept entirely secret. Questions at Press conferences are answered vaguely or avoided. Thus, there are virtually none of the standard criteria available to the West for determining the size of the industry in the Soviet Union. The customary statistics on employment levels, volume and value of output, and even location of plants, that are commonly available in the West are kept carefully hidden or at best are deliberately vague.

Accidents

Enough is known, however, for the West to be able to say that the Soviet aerospace industry is undoubtedly on a par with that of the U.S. in terms of size, and certainly in capabilities, both military and civil. Those who have criticised the Soviet Union's aerospace capabilities on the grounds of occasional accidents to civil aircraft—such as the TU-144 at the Paris Air Show in June, 1973, and to other airliners in service with Aeroflot or foreign airlines—or because of occasional failures with manned and unmanned space ventures, tend to forget that the West itself has a substantial number of airliner accidents each year, and has also not been without its difficulties and on one occasion its fatalities in the manned and unmanned spaceflight programmes. Everything that Western designers have seen of Soviet civil aircraft at the Paris Air Shows in recent years, or on the aprons of Western airports, and reports from NATO observers closely watching the changing Soviet military aircraft scene, all indicate that Soviet design and engineering standards have improved considerably and are

now very high, and production capabilities efficient.

It must also be remembered that the Soviet Union is virtually self-sufficient in its aerospace industry. While it tends to try to export some of its productions, it imports virtually nothing and it is only occasionally that glimpses can be obtained of the difficulties the industry experiences. One such that has recently emerged appears to be a shortage in the Soviet Union of some advanced electronic and avionics capabilities (especially air traffic control equipment), evidenced by the apparent desire to buy both U.S. and U.K. know-how and in some cases products also. Furthermore, the Soviet Union has also been showing interest in Western aero-engine technology, as indicated by strengthening interest in the Rolls-Royce RB-211 engine, and in some heavy types of aircraft, notably the Boeing 747 and the Lockheed TriStar and McDonnell Douglas DC-10 tri-jets.

At this time, it does not seem that the Soviet Union is developing a jumbo jet type of its own (although it is working on a medium-haul airbus), and it has also probably not yet pushed its civil engine capabilities to the same level of achievement as the RB-211 and the new Franco-U.S. CFM-56. That it could do so if it wished seems probable, since nothing about any of those Western engines is secret, the detailed technical and engineering information being freely available on a commercial basis—indeed, being given away at the Paris and Farnborough International air shows. But it is probable that the Soviet Union feels that it would be cheaper in the long run for it to buy the aircraft and engines it needs from the West, thereby saving it from duplicating work already done. Discussions between the Soviet Union and the West, particularly the U.S., however, have not yet reached the stage of firm orders for either aircraft or engines, and the U.S. Congress has expressed strong doubts as to the wisdom of such sales.

Under the general direction of the Ministry of Aircraft Industry the Soviet industry

is basically organised into a Union's civil aviation development system of "design bureaux," headed by some of the most famous names in world aviation. While some of these bureaux have specialities of their own, others cover a wide spectrum of aviation activities. The principal bureaux include Antonov, mainly engaged in heavy transport aircraft, especially for cargo carriage; Beriev, at work on amphibious aircraft and water-based types; Ilyushin, which specialises not only in military patrol and transport aircraft, but also in heavy transport aircraft and cargo carriage; Kamov, a helicopter specialist; MIG, probably the most well-known of all Soviet design bureaux in the West for its range of fighters and other combat aircraft; MIL, also a helicopter specialist, which has produced some of the world's most spectacular helicopter designs, such as the V-12 heavy-duty freight-carrying helicopter and the Mi-10 Flying Crane; Myasishchev, a bomber producer; Sukhoi, a fighter designer; Tupolev, which after MIG, is also perhaps the next best known bureau in the West, for a long line of transport aircraft, culminating in the TU-144 supersonic airliner, and for its range of bombers and other combat aircraft; and Alexander Yakovlev, designer of interceptors and smaller transports.

Research

These bureaux are supported by a series of research establishments, including the Central Aerohydrodynamics Institute (the Soviet equivalent of the U.S. National Aeronautics and Space Administration); the Central Design Office, which assigns the design requirements to the various bureaux; the Central Engine Research Office; the Scientific Institute for Airplane Equipment and the All-Union Institute for Aviation Materials.

The Minister in charge of all this aerospace activity is Mr. Pyotr V. Dementiev, who has held the post for more than 25 years, through the ruling periods of Stalin, Malenkov, Bulganin, Khrushchev and Kosygin and Brezhnev. Spearheading the Soviet

overseas, is expected to fly soon, and is expected to be a major unit in the Aeroflot fleet in the later 1970s and through the 1980s. The design of the aircraft follows that of the wide-bodied Boeing 747, with the four Soloviev engines mounted in pods under the wings, instead of being mounted at the rear of the fuselage (a design configuration originally adopted for the IL-36 but subsequently changed).

Short-range

Yet another new aircraft which is expected to make its appearance in the West soon—and may be seen at the forthcoming Paris Air Show at Le Bourget—is the Yakovlev Yak-42, a 100-120 passenger short-field tri-jet (with its three Ivchenko A-36 engines at the rear of the fuselage). Intended for short-range work, the Yakovlev design bureau is planning for production of about 1,600 aircraft to meet the expected demand over the next decade or so for an aircraft capable of short-haul work from short fields, bringing jet service down to those many communities in the Soviet Union that have never had it before. It is expected that the Soviet Union will make a major export effort with the Yak-42, seeking its certification in the U.S., and

with Western European and South-East Asian markets also in mind. Environmental acceptability has been built into the Yak-42—the designer, Alexander Yakovlev, has said it is intended to meet U.S. Federal Aviation Administration noise requirements—and it is intended for operation with a two-man crew.

Soviet military aircraft and missile capabilities have for long been recognised in the West as being among the best in the world, and there is little doubt that some of the most recent developments in these fields have forced the U.S. Defence Department and aerospace industry to quicken the pace of their own developments. Among some of the most recent developments have been the Mig-25 Foxbat, widely credited in the West as being the best combat aircraft in the world; the emergence of the USAF McDonnell Douglas F-15, and the U.S. Navy's Grumman F-14 Tomcat; the Mig-23U Flogger-C swing-wing combat aircraft; and the Sukhoi Su-19, a swing-wing ground attack fighter-bomber. A recent issue of the "International Defence Review," one of the West's major military journals, recently credited the Fencer by and watch such new developments as the F-16 and F-17 light weight fighters, and the Rockwell B-1 long-range strategic bomber, be under-

reach the NATO Central European region west of Frankfurt and return, flying at low level. For longer-range penetration, the Soviet Union has the Tupolev Backfire swinging-wing long-range bomber.

Arsenal

Collectively, these represent a formidable arsenal, and a long been recognised in the West as being among the best Soviet aerospace industry. Most NATO observers expect the Soviet Union to unveil soon some further military aviation developments. These glimpses of what is going on seem to occur every five years or so, and the last major revelations occurred at the Domodedovo Military Air Display. In view of the emphasis in the West as being the best, the Soviet Union has been placing in recent years in the USSR its overall military capabilities, and conventional forces and to get-C swing-wing combat aircraft; and the Sukhoi Su-19, a swing-wing ground attack fighter-bomber. A recent issue of the "International Defence Review," one of the West's major military journals, recently credited the Fencer by and watch such new developments as the F-16 and F-17 light weight fighters, and the Rockwell B-1 long-range strategic bomber, be under-

taken without some response. Everything that the aerospace designers of the West have seen indicates that the military aerospace development capabilities of the Soviet Union are extremely high, with an ability to produce new designs comparatively quickly—probably because the Soviet Union is not as concerned as the West at the volume of its defence spending, and because the aerospace industry there is less involved in fighting for money at political levels than it is in the West. This is not to imply that there is not competition between the various design bureaux for such development work as is available. It has been repeated on a number of occasions by leading Soviet aircraft bureau chiefs that competition between them is encouraged to ensure that the very best designs are produced. Also, the benefit of very long production runs, matching those of the U.S. industry on military work but going far beyond the production runs that the U.K. and other European military aircraft manufacturers have been able to achieve so far—although efforts are now being made to rectify this, for example, with the Anglo-West German-Hall Multi-Role Combat Aircraft (MRCA).

Michael Domes

Swedish uncertainty

AFTER FAILING to win the NATO Starfighter replacement competition with its Viggen, the Swedish aerospace industry is waiting for the political decisions which will determine its long-term future. By 1977 the Swedish Government and Parliament will have to decide on a 15-year "perspective plan" for Swedish defence for the period up to 1992 and on a five-year procurement programme for the 1977-82 period. A defence commission is due to report in the autumn of 1976. For the time being the only certainty is that in terms of real purchasing power government expenditure on the development and production of Swedish defence equipment will be cut from the level reached during the late 1960s and early 1970s.

The political decisions will involve a re-assessment of the nuances of Swedish neutrality. So far, that neutrality has been axiomatic with the maintenance of an independent defence organisation, credible enough to make an aggressor think twice before attacking Sweden. As defence costs escalate—and defence influences the political climate—the Swedes have to decide how far they can (or want to) maintain credibility without abandoning their present relative independence of foreign equipment.

The debate is a complicated one. Some Swedish politicians argue that in the '80s and '90s Sweden's neutrality will no longer call for a strong defence posture. Some military experts believe the emphasis should shift from sophisticated, technically advanced equipment able to tackle an aggressor before he reaches the country's borders, to a defence based on a tough, popular resistance.

Both arguments are vigorously contested within the military and political establishments, but if the Swedes choose to maintain the "Swedish profile" and their sophisticated defence system, they will have to find the money for the research into and development of at least essential equipment.

Workforce

The key questions for the aerospace industry are, first, whether there will be a demand for a new generation aircraft to follow the Viggen and, secondly, whether the continuing reduction in numbers of aircraft ordered will reach a level at which it becomes uneconomic to research and develop new Swedish equipment.

Saab-Scania, for instance, envisaged in the '60s production of 800 aircraft of the Viggen series: some 350 aircraft are now expected to be built. Current orders will enable Saab-Scania to maintain its production workforce more or less intact at least until 1985, but the situation is more critical for the 2,000 employed on the research and development side, unless new projects are started.

Saab-Scania's hopes were raised earlier this month when the Swedish Air Force submitted an "Aircraft Systems Plan 85" to the Government, calling for the development of a new light attack/trainer aircraft. It also proposed that the more powerful and more ad-

vanced JA37 interceptor version of the Viggen now in production should be modified into a new medium attack aircraft to replace the earlier JA37 attack version of the Viggen in the mid '80s.

New weapons for these attack units should be procured "either within the country or from abroad," the Air Force rather indecisively stated. Leaving open the question of whether Saab-Scania should be allowed to go ahead with the development of the new missiles it has been studying—although in a May Day speech the Defence Minister implied that new Swedish missiles would be produced.

Proposed

If accepted by the Government and Parliament, the Air Force proposal would mean that Saab-Scania could maintain its production staff through the next decade and also its development capacity but "at a somewhat lower level than before." The development costs for the two proposed aircraft over the 1977-85 period have been put at Kr.2bn. (£220m.), of which the major share would go on the new attack/trainer. This compares with Kr.4bn. spent on researching and developing the Viggen series.

The total cost of the Viggen series (some 340 aircraft) from the moment of conception in 1952, including Air Force operation and maintenance costs until the year 2000, has been estimated by the Defence Procurement Board (FMB) to be Kr.17bn. (£1,880m.) in 1974 prices. This figure illustrates the remarkable cost effectiveness of the Swedish aerospace industry, resulting primarily from the efficient use of a small but very highly skilled workforce and from the close co-operation at all stages among the Air Force, the Defence Procurement Board and the manufacturers.

Other aircraft industries and national defence procurement organisations could learn much from the Swedish system. Of special interest is the "incentive" pricing mechanism, which depends on a sophisticated indexing system that allows the manufacturer to reap the benefit of increased efficiency but punishes him for slipshod methods.

In the long run, however, competitive unit costs demand long production runs and it is becoming increasingly important for the Swedish aerospace industry to find export markets, an aim which is considerably handicapped by Government regulations which prohibit exports of attack weapons to politically sensitive areas. Saab-Scania, for instance, cannot compete in the Middle East market.

The Swedish industry has notched up sales of nearly Kr.1bn (£110m.) over the past five years, principally on aircraft exports to Denmark, Finland and Austria, and it has not entirely abandoned hopes of selling the Viggen interceptor inside NATO. If the four-nation group breaks up over the choice of the American F-16, with the Belgians plumping for the French Mirage, the Swedes believe they would have a chance of selling the Viggen to

Denmark, which has previously bought two squadrons of close Drakens from Saab-Scania. In army support, have been sold the recent discussion of the political implications of NATO countries buying from neutral Sweden, the fact that the Swedes had already sold aircraft to a NATO country tended to be overlooked.

Australia remains a distant (in more than the geographical sense) prospect. An Australian team made a thorough assessment of the Viggen in 1973, but the longer the Australians postpone the replacement of their Mirage squadrons, the more likely it becomes that they will choose an American or French aircraft of later vintage. The Viggen remains in contention in Austria, which has been discussing the possibility of leasing Drakens from the Swedish Air Force as a temporary solution to its plans for re-equipping its fighter squadrons.

Saab-Scania has sold nearly 200 of its 105 twin-jet/trainer/attack series, including 40 to Austria, and has a new version, the 105G, ready but not yet in production because of lack of orders. More than 100 Saab MFI-17 supporters, a light

piston-engined STOL aircraft, designed for close army support, have been sold in six months, including 32 to Denmark at a price of Danish Kr.25m. (£1.8m.) and an undisclosed number to Pakistan.

Co-operation with a foreign manufacturer or group on a civil project could solve Saab-Scania's problem in keeping its research and development staff together, and its executives are looking for "suitable partners" to develop a 200-seat airliner—while recognising at the same time that civil aviation is hardly in a favourable situation for such a project.

In the missile field Saab-Scania has done the basic research on a new air-to-air skin-bombing IR missile, designated the Saab 372, intended for the Viggen interceptor. A full-scale mock-up of this missile is being shown at the Paris Air Show, together with the RB04E air-to-sea and RB05 air-to-surface missiles which Saab-Scania produces for the Viggen.

William Dullforce
Nordic Correspondent

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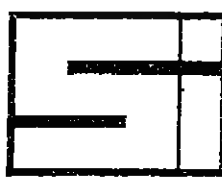
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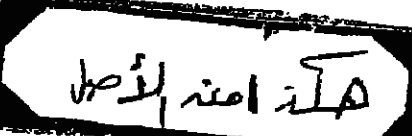
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U.S. manufacturers enjoy a good year

WITH FEW exceptions the past year has been a remarkably—indeed unexpectedly—good one for the U.S. aerospace industry. Most of the major aerospace companies have managed not only to weather a severe recession but also to turn in more than adequate profits. For example, of the five principal aircraft manufacturers, all except McDonnell Douglas reported higher earnings for 1974 than for 1973, when the economy was in the final stages of a boom.

This buoyancy is undoubtedly the result in part of lessons learned during the recession of 1970 and 1971. While less deep than the present economic downturn, it was one of the most traumatic periods through which the industry has passed since the end of the second world war. Its impact brought Lockheed Aircraft to its knees and caused Boeing to decimate its labour force.

Prosperity

Since then, the industry has taken steps to improve its efficiency, reduce overheads and generally trim away some of the fat that had accumulated during a quarter century of almost uninterrupted prosperity. In some cases, aerospace companies have also been exploring diversification into new areas which offer applications for their advanced technological capability but which are commercially unrelated to the mainstream of their business. Boeing's ventures into mass transit, land reclamation and pollution control are but one example.

A much more important and fundamental reason for the industry's current strength, though, is the volume of Government contract work. The loss of business resulting from the U.S. withdrawal from Vietnam and the rundown of the space programme has been more than offset by a sharp increase in U.S. Government military procurement, as the Pentagon has turned its attention away from

Indo-China to refurbishing its arsenal of conventional and nuclear weaponry.

These enlarged expenditures at home have been supplemented by a surge in demand for military hardware from abroad. Much of this demand has come from the newly prosperous Middle Eastern countries, of which Iran has been a major customer. One of its biggest orders is for 70 Grumman F-14 combat aircraft, and the Arab world is also in the market for a variety of airborne hardware. Coincidentally, the need of at least four European countries for a new fighter aircraft may provide an additional and profitable opportunity for at least one U.S. manufacturer.

The crop of young and liberal politicians who were elected to Congress for the first time last autumn are generally less sympathetic to the Pentagon's demands for funds than were some of the older generation which they replaced. But the Pentagon has resisted with reasonable success so far Congressional moves to cut its budget requests—in part because even the most radically-minded politician recognises that defence contracts can mean jobs in his home constituency. During a recession, that is an important consideration.

Moreover, the bitter hostility towards the military establishment that was displayed in some quarters of Congress during the Vietnam war has now largely dissipated. It has, to a certain extent, even given way to concern that American ability to maintain national prestige around the world is on the decline and needs to be reinforced. These various factors combined should ensure that military procurement expenditures will remain at a fairly high level for the foreseeable future.

Among conventional airborne weaponry, the largest new contract to have been awarded in recent months is for the F-16 lightweight fighter to be built

by General Dynamics and powered by engines manufactured by Pratt and Whitney. The Air Force plans to buy at least 650 of the aircraft at \$6.7m. each, and its orders could eventually run to as many as 1,000.

Replacement

The F-16 is the leading American contender as a replacement for the ageing F-104-G Starfighters in service with the Belgian, Dutch, Danish and Norwegian armed forces, which are also considering the Mirage F-1 and the Saab Viggen. Recently, however, a new competitor has entered the contest in the form of the F-18, developed jointly by McDonnell Douglas and Northrop and powered by General Electric engines.

The F-18 design has been selected by the U.S. Navy, even though the U.S. Congress had specifically demanded that the Navy choose the same basic aircraft as that selected by the Air Force. The Navy's decision is somewhat tentative and may face opposition on Capitol Hill. But if it sticks, the F-18 may command serious consideration by the four European NATO members, some of which prefer its twin-engine design to the single-engine configuration of the General Dynamics F-16.

McDonnell Douglas also has a major ongoing programme in the U.S. Air Force's order for the F-15 fighter—a considerably more sophisticated aircraft than either the F-16 or F-18. During the new fiscal year funding for the F-15 is due to rise to more than \$2bn. from a little over \$1bn. in fiscal 1975.

Among other major programmes, Rockwell International's contract to build the B-1 bomber remains vulnerable to Congressional criticism though so far it has survived its political opponents unscathed. Earlier this month the aircraft, which is designed to deliver nuclear payload and can fly at

U.S. DEFENCE DEPARTMENT BUDGET IN \$M.

	1974	1975	1976
Budget authority requested	88,898	90,758	106,340
Total procurement	17,467	17,356	24,420
Aircraft	5,939	6,081	8,013
Missiles	2,682	2,515	3,305
Total research and development, etc.	8,195	8,616	10,237
Aircraft	1,667	1,615	2,125
Missiles	2,123	2,108	2,489

twice the speed of sound, passed a critical test when the House Armed Services Committee defeated an attempt to reduce funding for the project. But it still has a number of hurdles to surmount before production is guaranteed—including a final decision by the Air Force as to whether it wants the aircraft at all.

In the field of nuclear weaponry, Lockheed has secured a major contract for the missile to be deployed in the new generation of Trident long-range submarines, though development work on this project is reported to have encountered a number of technical problems. But the Navy has forecast that the missile will be ready for deployment before 1980 as scheduled. Lockheed is also developing the MARV warheads to be fitted to these missiles and thus stands to benefit substantially if the second round of Strategic Arms Limitation Talks between the U.S. and the Soviet Union fails to reach a limit on the number of warheads deployed by each side.

On the commercial side, the picture is somewhat more mixed. The outlook for new sales has been clouded by the squeeze on both domestic and international U.S. airlines resulting from high fuel prices and a decline in passenger traffic caused by the recession. It will be some months, at least, before airline business picks up

more than its sales for the whole of that year.

Though the rise in fuel prices has diminished the popularity of Boeing's 747 Jumbo jet, which is now less economical to operate on most routes than the new generation of wide-bodied aircraft, Boeing continues to enjoy success with its 727, 737 and 707. All these aircraft have been in production for some time, and most of their development costs have already been written off.

Setbacks

The remainder of the commercial aircraft market is divided between McDonnell Douglas and Lockheed, which are competing in the wide-bodied aircraft arena with essentially similar products. Both companies have suffered setbacks in recent months, though for entirely different reasons.

McDonnell Douglas has suffered from the effects of a prolonged machinists' strike which

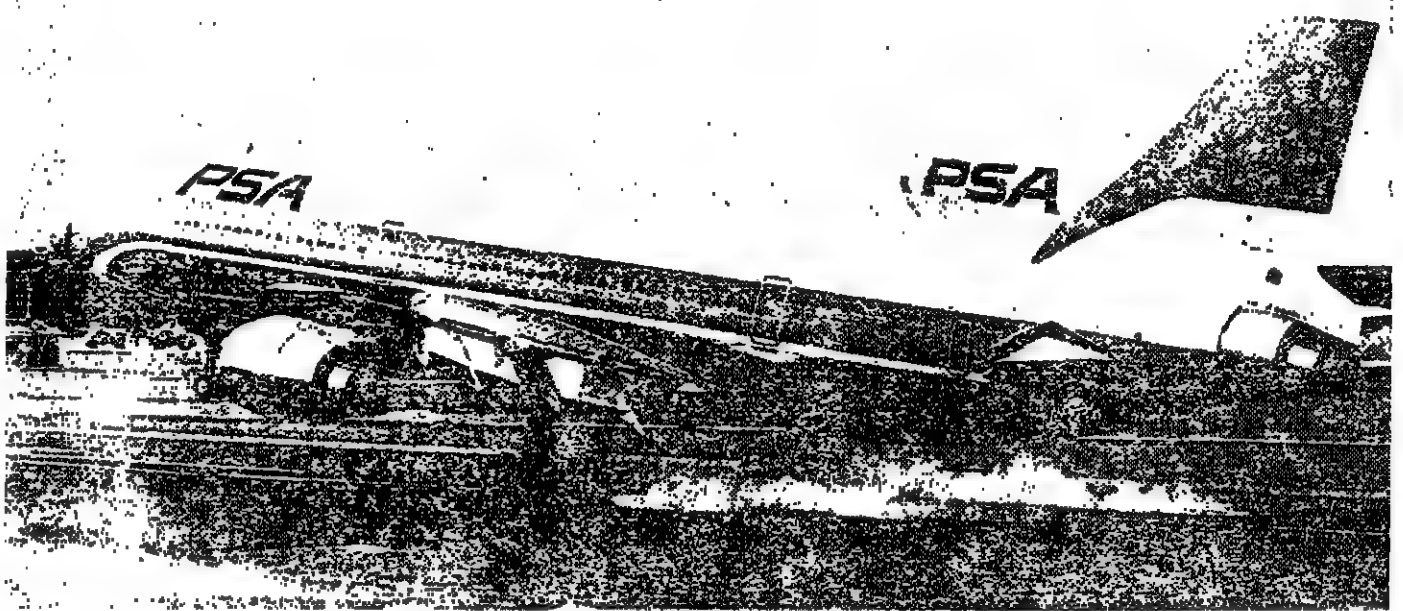
has led to parts shortages and a downturn in the market for lay-offs. Furthermore, its DC-10 has been the target of much unfavourable publicity since March of last year, when a Turkish Airlines DC-10 crashed outside Paris, killing all 346 people aboard. McDonnell Douglas is currently defending itself against a number of lawsuits filed by relatives of the dead passengers, accusing it of liability in the crash.

Last February, the company announced that it had cut the estimated sales of the DC-10 by 20 per cent. to 400 because of sluggish economic conditions. As a result, costs per unit will rise, reducing future earnings. The company continues, however, to enjoy steady if unspectacular sales for its DC-9, of which more than 800 units have been delivered. A new "stretched" version of the DC-9, the Series 30, has been launched with encouraging initial success.

Like McDonnell Douglas, Lockheed faces the prospect of

The backlog of L-1011 orders is sufficient to keep Lockheed's production lines operating at satisfactory levels for the rest of this year at least. Though the breakdown of the Textron deal was a blow to the company, its financial health is far sounder than it was 18 months ago, and its viability for the next 21 years should be assured by a new lending agreement which it has negotiated with its banks.

Guy de Jonquieres
New York Correspondent



The Lockheed TriStar, which uses the Rolls-Royce RB-211 engines.

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Rapier

Swingfire

Seawolf

Intelsat IV and IVA satellites and sub-systems (with Hughes Aircraft Company of USA)

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AEROSPACE X

French pride suffers a blow

"THE TROUBLE IS," commented one senior French Cabinet Minister in a private conversation recently, "that the American product appears to be technically somewhat superior to ours." He was, of course, referring to France's fast fading hopes of landing the prized "arms deal of the century" for re-equipping four Nato countries with combat aircraft.

For in spite of successive accommodations on price and even an eleventh hour bid this month to persuade the four customer countries of Belgium, Holland, Denmark and Norway that they should co-operate on the construction of France's Mirage F-1 M-53, the deal looks like slipping away across the Atlantic to General Dynamics' F-16.

If it does, Dassault-Breguet stands to lose the minimum \$1,500m. It would have earned from selling its Mirages as replacements for the four Nato countries' obsolete F-104 Starfighters. But the loss to Dassault would probably be more one of pride than profit. Were it any other manufacturer in the French aerospace industry, though, it would be a very different story. For

Dassault is the exception that proves the rule. Responsible for a major slice of France's record breaking arms sales of Frs.20,000m. last year, which lifted the country into the position of overtaking Britain to become the No. 3 arms dealer in the world after the U.S. and the USSR, Dassault's success has only underlined the failure of the civil aircraft industry in France. Although the probable loss of the Nato contract is naturally a setback, Dassault has already produced 80 of the new F-1 range for the French air force, with the likelihood of further orders from the Middle East now that the French embargo on arms sales to combatant countries there has been lifted.

For the rest of France's aerospace industry, though, the sad truth is that civil projects do not have the same resilience. Even Dassault-Breguet would be the first to admit it, given the fate so far of the company's pilot venture into civil aviation with the twin-engine Mercure passenger jet.

One of the trio of projects backed by the French Government with the aim of bringing American domination of European markets to an end, Mercure can reasonably be said

to have been even more disastrous than the Airbus or Concorde. The latest developments in the unhappy saga of Mercure have even produced a damaging split between the management of the French national airline, Air France, and the Government which is the airline's foremost shareholder, over Air France's adamant refusal to purchase Mercure.

Hopes

Civil aviation in France during the past decade has become more than ever an instrument of official foreign policy, with new and ambitious projects backed to the hilt in the hopes of winning for France a substantial share of the overwhelming passenger aircraft sales that now go to the U.S. At present, between 80-90 per cent. of passenger aircraft operated by Western European airlines are manufactured in America.

The twin-engine Mercure, produced by a Dassault-led European consortium, was designed to rival two winning U.S. McDonnell-Douglas DC 10 and Boeing 737. But to date it has failed to sell outside France and cannot even be said to enjoy a ready market at home.

Air France's refusal to buy customer that has been found for Mercure. And even then the 52 obsolescent aircraft it must soon replace—34 Caravelles and 18 Boeing 707s, the latter because they are particularly heavy fuel users—has costs. Over the next 12 years the State is to pay Frs.845m. as a subsidy for the 10 Mercures sold to Air-Inter, partly to offset the aircraft's per flying hour cost, which doubled from original estimates to reach Frs.3,000, and partly because of the increased unit price that has resulted from its commercial failure. At first, a single Mercure was to have cost Frs.41m. per aircraft; that figure is now nearer Frs.30m.

Insulated by the success of its military aircraft—and this year French arms sales are expected to increase by £500m., or 25 per cent.—Dassault can ride out its Mercure losses. But Aerospatiale, the French civil aviation leader involved in the equally unhappy Concorde and

A 300B Airbus projects, cannot. For 1973 it recorded a loss of Frs.484.7m., which comfortably exceeded its own issued capital.

Publicity

The difficulties surrounding both projects have received massive publicity, but perhaps the full extent of the problem is underlined by comparing Aerospatiale's modest 1973 loss of Frs.13m. with the following year's record deficit. When the details of its financial troubles last autumn it admitted that during 1973 turnover had grown only six per cent. to Frs.4,255m. and that further Government aid will be needed to keep the company afloat. There also remain serious fears that Aerospatiale's 40,000-strong workforce may eventually have to be trimmed by as many as 6,000 jobs.

Meanwhile, the outlook for

both the Concorde and Airbus programmes remains fairly bleak. Given the nine Concorde sold to Air France and British Airways, the remaining six options held by Iran and China have still to be translated into sales. Nor did Chinese deputy Premier Mr. Teng Hsiao-ping's recent official visit to France result in the expected announcement of firm orders for the supersonic carrier.

On the Airbus front, Air France has found that since introducing the wide-body aircraft on some of its European routes it has been forced to slash the number of in-flight hours it can afford when competing with the smaller aircraft operated by competitors. And with Spain's national airline Iberia having finally decided last year to buy 27 Boeing 737s rather than the Airbus, France now remains the only member of the five-nation Airbus Industrie European consortium to

operate the aircraft. The only positive development has been Air India's decision in January to complement its Boeing 737-200 fleet with three Airbus, while taking out options on a further three.

Prestige projects are not the only sector of the French aerospace industry to be beset by difficulties. Light aircraft, an area in which France has become the European leader during the past five years, has also suffered from the general economic climate. Last year sales of light aircraft dropped 20 per cent. with only 900 units sold, against 1,100 the year before. But when compared, say, to Mercure, Concorde and Airbus, the French light aircraft picture is in a quiet way as bright as that for military aircraft, with 66 per cent. of 1974's Frs.135m. sales going for export.

Giles Merritt

State of flux in West Germany

WEST GERMANY'S small aerospace industry stands poised somewhat uneasily between idealism and reality. Its ideal would be to play a useful part in a European aerospace programme that distributed well-coordinated projects among a number of permanently established multi-national groups. The reality consists of ad hoc international co-operation on large but intermittent military and civil projects, each of whose success is very sensitive to political or economic trends.

Although the turnover of the industry expanded quite fast during the seventies, rising from DM2.9bn. in 1970, to DM3.8bn. in 1973, and an estimated DM4.0bn. last year, the expansion has been overwhelmingly due to the spending of the West German Government. The Government now feels that this band of growth has gone far enough, and its current plan, pending a rethink on the future course of the industry.

The Government last year appointed Martin Gruener, a Secretary of State in the Economics Ministry, as a new co-ordinator of the German aerospace industry. The fact that he was given this problematic assignment was symbolic of the government's disappointment with the progress towards European integration in the industry. There was no sign of the ad hoc get-togethers developing into stable and long-term relationships. There was no sign of the companies forming permanent cross-frontier links. Fundamental to these disappointments, there were only feeble signs of Government wanting to co-ordinate their aerospace policies, and their research programmes.

The German Government's latest "basis programme" for the German aerospace industry was presented last winter. It still contains large elements of a European creed, but this time riddled with observations of disappointment. In formulating its aims in the period 1974-78 it states:

- 1—Europe must have an aerospace industry for reasons of defence, foreign policy, and economic development.
- 2—If this industry is to be successful West Germany must play a part in it.
- 3—The industry currently consists of companies that are too small employing too many people and doubling up on each other's efforts.
- 4—The European market is big enough to provide the initial sales basis for the development of new aerospace products; and
- 5—Government spending on aerospace projects is already threatening to strain national budgets.

Vague

The Government then says that its aim is to preserve the German aerospace industry in a state in which it can join forcefully in any programme of European co-operation. In the meantime, the aim of its aid will be to develop and consolidate Germany's aerospace industry on a national basis. The Government intends to cut down the research and development aspects of the industry's turnover and to try to force the pace in production and sales. The basis programme is vague as to how this will be achieved, its Herr Gruener's task is to clear the vagueness.

The Government's spending in DM3bn. a year for the next three years is divided into four areas: pure research, civil aviation projects, military projects, and space projects. Spend-

ing in the first of these categories will amount to DM500m. or DM600m. a year and will be appropriated by the Research and Technology Ministry. The Government's spending on civil programmes will amount from DM240m. in 1974 to DM350m. in 1978. It will be devoted to the development and marketing subsidies for the two major civil projects involving West Germany—the A-300 Airbus and the VFW-614 short-haul jet being constructed by the German-Dutch consortium VFW-Fokker.

Military expenditure will run at some DM2.5bn. a year and will be concentrated on the Multi-Role Combat Aircraft (MRCA), an Anglo-German-Italian joint project, and the Franco-German Alpha-Jet trainer. These aircraft are not yet officially cleared for production but the odds are that they will both be produced and compensate the German industry for the running-down of the "Transall" transport aircraft programme, the CH-53 helicopter programme, and the F-104 Starfighter programme.

Financed

Government support of the space programme is financed through the Research and Technology Ministry and will continue to run at between DM300m. and DM350m. a year until 1978. The programme will aim at developing the peaceful uses of satellites, at co-operating with U.S. in developing the idea of manned space flight using reusable vehicles (Space Shuttle), and at using space conditions for industrial processes.

The West German aerospace industry now consists of three companies employing 50,000 people, compared with the 100,000 that work in the industry in France and the 200,000 in the U.K. The industry is only 20 years old, for it was only in the mid-fifties that it was allowed a rebirth after its total suppression in the wake of the world war. In that time the natural talent of the Germans for innovation and precision engineering has brought the industry back up to world standard. Not only have the old skills re-emerged but they have done so under the old names, with the two wholly-German companies being called Dornier and Messerschmitt-Boelkow-Blom.

MBB is the largest of these with a turnover last year of DM1.4bn. after DM1.2bn. in the previous year. The company has yet to announce whether it made a profit in 1974: in 1973 it reported earnings of DM7.3m. MBB is heavily dependent on the success of the A-300 Airbus and the MRCA. The Airbus is a five-nation project in which the company Deutsche Airbus has a 47.9 per cent. stake. Deutsche Airbus is, in turn, owned by MBB as to 65 per cent. and as to the rest by the Dutch-German company VFW-Fokker. The Airbus is already in service with Air France and the construction consortium has now achieved 48 sales. The aircraft is now hindered by the general world recession from achieving the sales breakthrough it needs to become a commercial success.

MBB is involved in the construction of the MRCA through its 42.5 per cent. holding in Panavia, the British-German-Italian consortium that is building the machine. The last official estimate for the cost of this aircraft was DM21m. Britain's original aviation projects, military projects, and space projects. Spend-

ing for 100. So far the project has gone reasonably well and has, despite delays and the inevitable escalation in cost, survived the "check-points" that are supposed to ease the cancellation of a multi-national project whose difficulties have got out of hand.

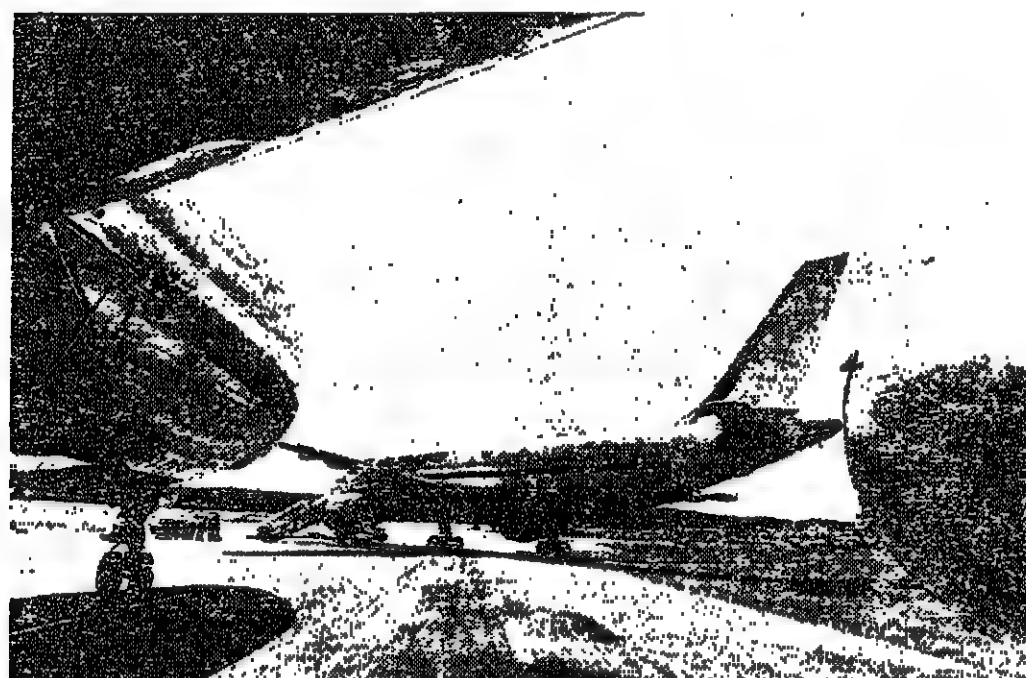
Apart from its role in these two projects MBB is a successful helicopter constructor. It sold 67 BO-105 multi-purpose helicopters in 1974, bringing the total sold to 180. It also makes the "Roland" anti-aircraft missile, the "Milan" anti-tank missile, and the air-to-ship missile, "Kormoran." Finally it is involved in the satellite business and in the development of new systems of rapid transport and urban transport. The other wholly-German aerospace concern is a private company, the Dornier Group. Dornier's turnover in 1974 was DM620m., up from DM489m. in the previous year. The company has yet to reveal its profit or loss figure for the year. Aircraft projects account for about half of the company's turnover, space projects take another fifth, and special projects with engineering the rest. The whole group employs around 7,000 people.

The company has been successful with its two-engine utility aircraft, the Sky Servant, and it is now poised at the start of its most important project to date, the Alpha jet trainer. It is developing this aircraft with Avions Marcel Dassault-Breguet Aviation of France. The two-jet aircraft has just received clearance for the pre-production run and if it goes ahead as expected

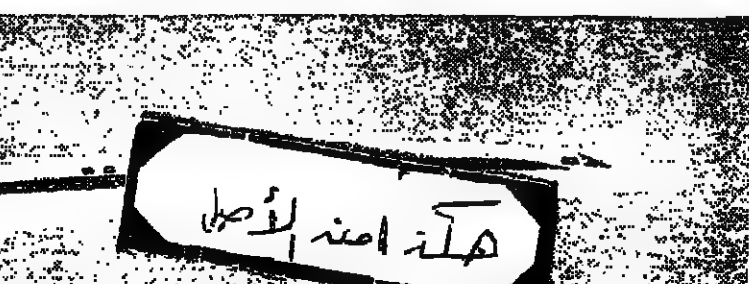
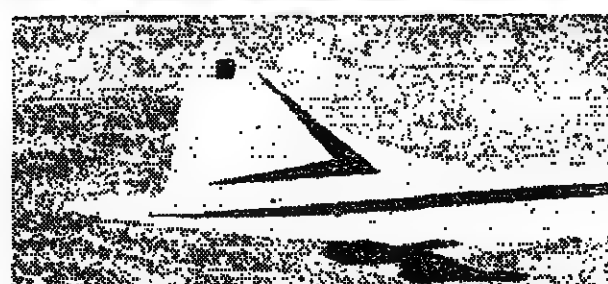
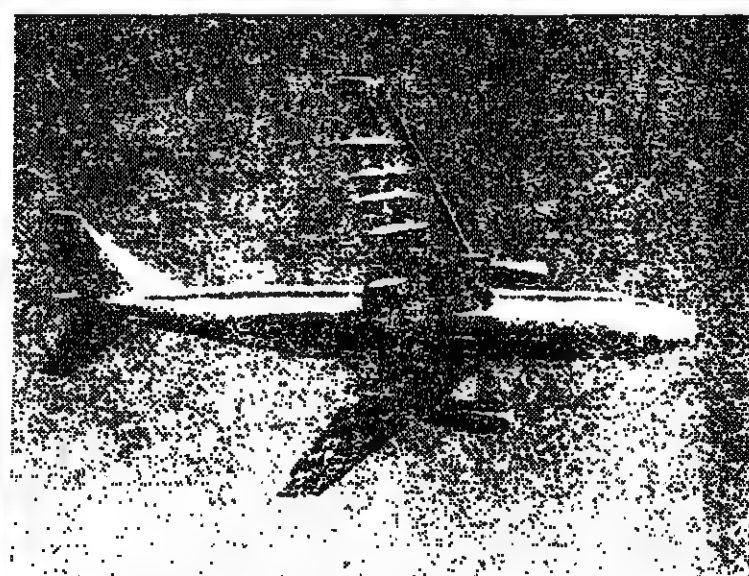
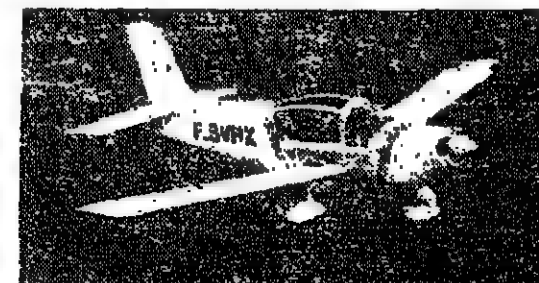
it should bring Dornier some DM500m. of orders between 1976 and 1980. The aircraft will go to the West German, French and Belgian air forces as a trainer and close-support plane. Dornier's other important prospect is its participation in the VFW-Fokker/Erno Group which has won the contract to build the European manned orbital laboratory at a cost of some DM600m.

The third West German aerospace activity is the German-Dutch company, VFW-Fokker, which was formed by merger in 1969 after nine years of increasing co-operation. Total sales last year were DM1.4bn., virtually unchanged from the figure in the previous year. There are currently 18,000 workers on the joint company's payroll. VFW-Fokker's major new project is the VFW 614—a 44-seater jet with a range of 1,200 kilometres. This is another passenger aircraft project that is hanging fire because of the slack state of the world economy. So far VFW-Fokker has obtained 10 firm orders and 25 options. It needs to sell a considerably greater number to break even. VFW-Fokker also holds 35 per cent. of Deutsche Airbus which co-ordinates West Germany's involvement in the Airbus project. Its key involvement in space travel is through its subsidiary Erno-Raumfahrt Technik. This company last year won the contract for the development of the European manned orbiting space laboratory and the company will be co-ordinating production in many European countries.

Nicholas Colchester



The A-300 Airbus which is now in service with Air France and other airlines.



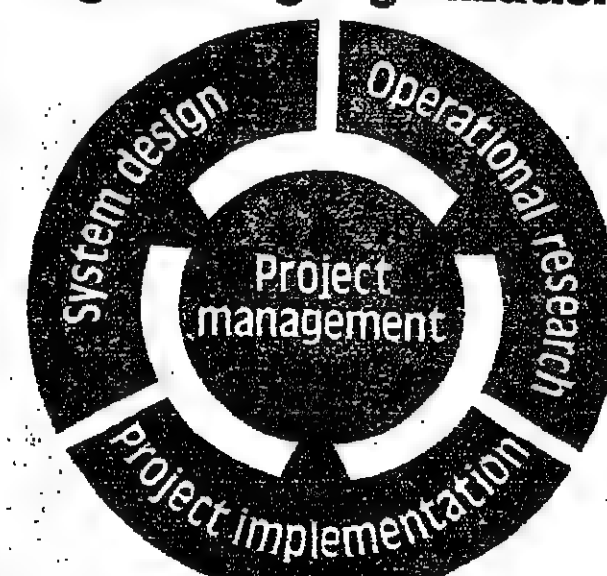
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Dutch space success

WHILE THE first Dutch satellite is still successfully orbiting the earth carrying astronomical research, the Dutch Government has decided to allocate an initial sum for a new space project. The sum involved, Fls. 3.4m. is for a tentative design study for an infra-red measuring astronomical satellite (IRAS).

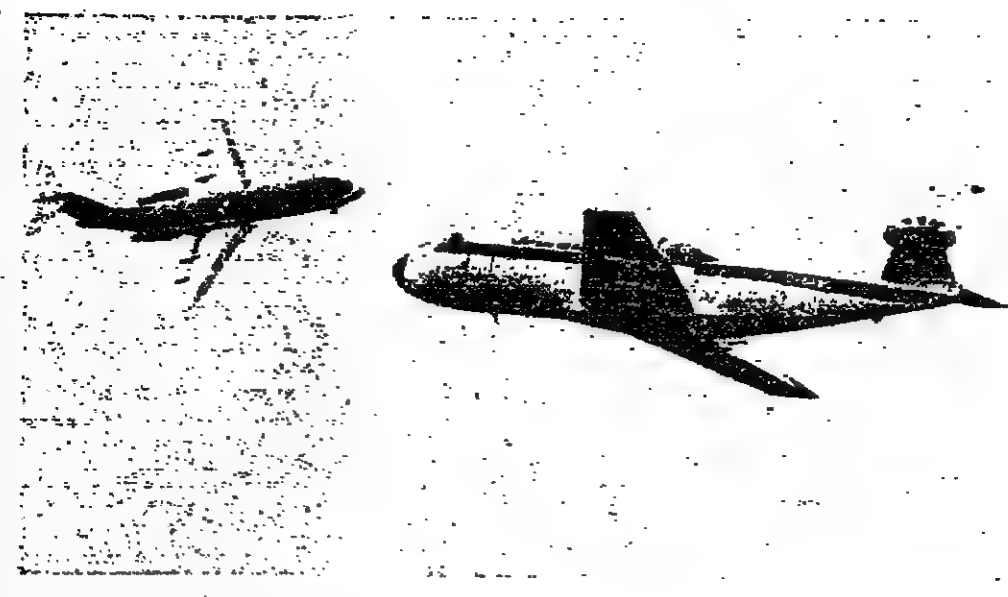
The sum allocated is still small but it does at least provide an indication of the Government's intention to remain involved in space work and high technology, something that had been subject to some doubts in the past. The Ministry of Economic Affairs is currently preparing a White Paper on industry which will outline the Government's thinking on future industrial development in the Netherlands. That paper, too, is expected to confirm continuing interest in aerospace activities.

The work on the IRAS study will provide more work for those involved with the current ANS astronomical satellite, filling up some of the capacity now that that project is more or less completed. The ANS operations have been extended until October and the necessary funds are freed until then. On the basis of the results in the coming few months the decision will be made whether to extend operations until November, 1978, the expected end of the satellite.

The ANS satellite was launched last October in California with the aid of NASA and is now being guided and monitored by the European Space Operations Centre (ESOC) in Darmstadt, Germany. Apart from three measuring instruments, the satellite is entirely Dutch-made and the two companies involved in the two projects, which have added much prestige to the Dutch space technology effort, are VFW-Fokker and Hollandse Signaal, which is a subsidiary of the big Philips electrical group.

A second development, one of very great importance, particularly for the Dutch arm of the VFW-Fokker concern in Schiphol, is the decision on the replacement of the ageing F-104 Starfighters in the air forces of Holland, Belgium, Denmark and Norway.

According to the latest reports, the Dutch Cabinet is expected to make its decision known before the end of this month. All indications are that it will select the U.S. General Dynamics light-weight fighter, the F-16. It has made the selection on the basis of technical and general capabilities and costs rather than the offset arrangements offered which are said to be somewhat less attractive than that offered by the SAAB and Dassault competitors.



The VFW-Fokker F-28 (left) circles behind the new VFW-Fokker 614.

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Controversy

A decision of very wide economic, financial as well as international political importance, it has also been subject to controversy in Holland itself. This did not so much concern the varying and sometimes conflicting demands from ministries such as the Ministries of Economic Affairs, Foreign Affairs and Defence, but the Starfighter decision had threatened for some time to split up the dominant Labour Party (PVD) in the centre-left coalition Cabinet. A major part of the Labour Party had wanted a cheaper and less versatile aircraft and a study of planes such as the U.S. Tiger and the Anglo-French Jaguar. These demands were swept aside by Defence Minister Mr. Henk Vredeling, however, who said that such

aircraft did not meet the necessary requirements.

There has also been a persistent rumour in Hague Government circles that Mr. Vredeling has presented the other Cabinet ministers with some sort of a compromise. This would be the purchase of some 20 fewer aircraft from General Dynamics than the planned 102 (total contract value Fls. 2.3bn.). It would allow more time to study the possibility of a future European aerospace industry. However, whatever aircraft is finally picked, much of the offset work will go to Fokker in Schiphol as the Dutch arm of the German-Dutch aerospace concern VFW-Fokker. The concern certainly needs more work in the military sector. The work lead in the civil sector is very satisfactory though there are distinct worries about sagging margins as a result of increasing efforts to maintain market shares in the face of sharply rising competition, notably from U.S. aircraft manufacturers.

Fokker recently announced it was building a new version of the F-28 jet passenger liner. It could carry 85 passengers and has been designated MK-4000. The aircraft, which would appear to underline Fokker's confidence in the future, is said to have created plenty of interest among the operators. The MK-4000 is basically the

long-bodied MK-8000 without the leading-edge slat and its engines will again be supplied by Rolls-Royce, which is Fokker's exclusive power plant supplier. Sales of the turbo-prop F-27 and the F-28 jet passenger liner are developing rather well, a Fokker spokesman said in Schiphol. No less than 629 F-27s have been sold so far (the break-even point was about 125) and some Fls. 60m. has been paid to the Government in royalties, which is 190 per cent. of the sums advanced many years ago for the project. For the F-28, Fokker said the advances had totalled Fls. 145m., of which Fls. 20m. has been paid back. Sales have reached 106 now but it is understood that the break-even point has been put back to 240.

The company said that whereas F-27 production was running at a rate of only 0.5 a month a few years ago and it considered ceasing production altogether, output has now reached 1.5 a month which would be pushed up to 2 in 1978. For this aircraft, Fokker was now actively looking at new markets such as maritime reconnaissance and fishery protection. As for the F-28, production which still ran at one a month two years ago will be doubled by 1977. On the whole, Fokker aircraft have benefited from the aftermath of the

energy crisis and the fact that they are relatively versatile and popular for regional airline services. The company has achieved many sales in developing countries and the Middle East, too.

Fokker is now recruiting new personnel and despite the many re-training schemes and increased capacity at the training school, there is still a shortage of skilled labour. A number of people had to be recruited from neighbouring countries, including Britain. Once the Starfighter replacement programme gets under way, there are likely to be more staff problems if Fokker is unable to meet the increased labour demand itself.

Sales

Although Fokker is optimistic enough about the future of its aircraft business, the group's annual report, which is due out later this month, is unlikely to show the much-needed rise in profits. In 1973, the profit-to-sales ratio had reached a low of 0.8 per cent.

Although in technical terms, European aircraft manufacturers can successfully compete with the U.S. manufacturers, the story on the sales side is completely different, for civil as well as military aircraft. U.S. manufacturers have excellent relations with the many international airline companies, but, more importantly, there are added advantages such as the relatively "cheap" dollars, their ability to offer attractive financing arrangements with the aid of the Export-Import Bank, and, in a way also, the U.S. import duties on non-American aircraft. Exports from Holland, as well as Germany are already being affected to some extent by their hard currencies.

Not surprisingly, there was one report which circulated here recently which was that Fokker was planning to make representations to the Dutch Government for some form of aid, possibly along the lines of the Exim Bank. It is ironic that whereas there are reports of Fokker's sales successes, the company is in fact struggling very hard to make money out of those sales.

Michael Van Os, Amsterdam Correspondent

Italy seeks partnership

IT IS NOW four years since the Italian Government decided in principle that the development of a national aerospace industry capable of participating as a viable partner in international joint ventures was an indispensable part of Italy's overall industrial growth strategy for the second half of this decade and into the 1980s. This belief that aerospace, alongside electronics and nuclear engineering, were key areas in which no industrial country could afford to be absent led initially to the creation of the Aeritalia through the merger of the non-engine aerospace activities of the Fiat group and the aerospace activities of the IRI/Finmeccanica group.

But this declaration of principle and the formation of Aeritalia has not been followed up by the sort of financial and political backing required in the difficult task of building up a viable industry. This situation was underlined recently by Sig. Rinaldo Ossola, president of the Industry Association, Associazione Industrie Aerospaziali (AIA), who pinpointed the absence of an adequate government aerospace policy and the low level of spending on military aircraft as the principal obstacles to the growth of the industry. In spite of this, however, the industry output rose to over Lire 350b. (£235m.) last year of which some Lire 180bn., or more than half, for export.

Debate

Furthermore, there are now clear signs of a growing political awareness of the importance of the industry. The clearest indication of this can be seen in a two-day Parliamentary debate in the future of the industry, the first which has ever taken place here. The debate, which moved out of the Select Committee stage and onto the floor of the lower House at the insistence of the Communist Party, ended with a large majority decision to vote Lire 150bn. over the next six years, mainly to en-

able Aeritalia to go ahead with its co-operation with Boeing in the T-X7 project.

This is the core of Italy's civil aircraft ambitions. A new factory is under construction at Foggia in Southern Italy which will give Aeritalia the capacity to produce parts and sub-assemblies in series for the jointly designed T-X7 family which will, however, be assembled, initially at least, in Seattle. But the T-X7 project has had a chequered existence. The original STOL concept has been abandoned in favour of a medium range, 200 seat aircraft offering fuel economy, safety and silence as its principal characteristics. The final shape of the project still has to be defined, however, and the ultimate fate of the project depends on the willingness of the airlines to embark on a further round of heavy investment in new generation aircraft such as the T-X7 family.

Aeritalia itself still has confidence that the T-X7 project will go ahead. Its original 50 per cent. stake has now been reduced to 20 per cent., not by downgrading its original financial contribution but as a result of the expansion of the project from the originally conceived 400-aircraft basis to a theoretical 1,000 aircraft of the type now conceived. Aeritalia hopes that the 30 per cent. left open will be taken up preferably by another European aircraft company or group.

In the meantime, Aeritalia's mainstay continues to be subcontracting work, such as the construction of body panels and tail units for the DC-9 and DC-10 and its military work on the variable wing for the MRCA project, the G-91Y fighter-bomber, and trainer-version of the F-104S. Up to the end of April, Aeritalia has produced 643 complete panel units for the DC-9, and 218 tail units and 235 panels for the DC-10. The Turin plant also produces panels for the Dassault Mercure airliner.

The 44 G-22s ordered by the Italian Air Force last year came just in time to save this project

and the first export orders—two for the Argentine Air Force plus an option on a third—have started to flow in. The Turkish Air Force has also bought 15 Lockheed 144s from Aeritalia and has options on another 15, and the Greek Air Force has also shown interest.

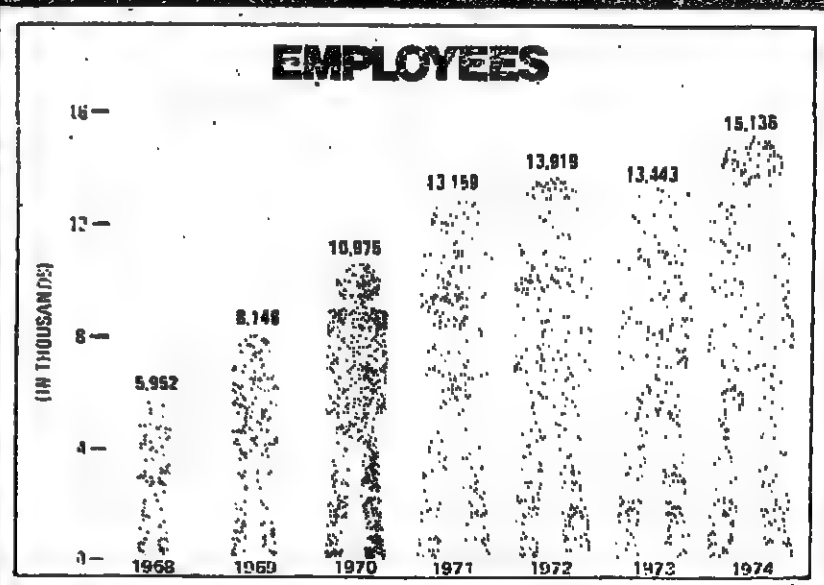
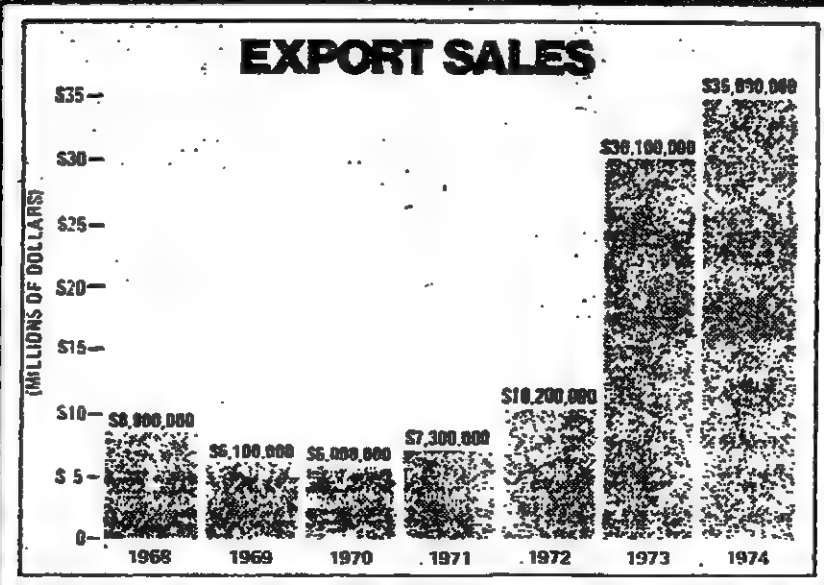
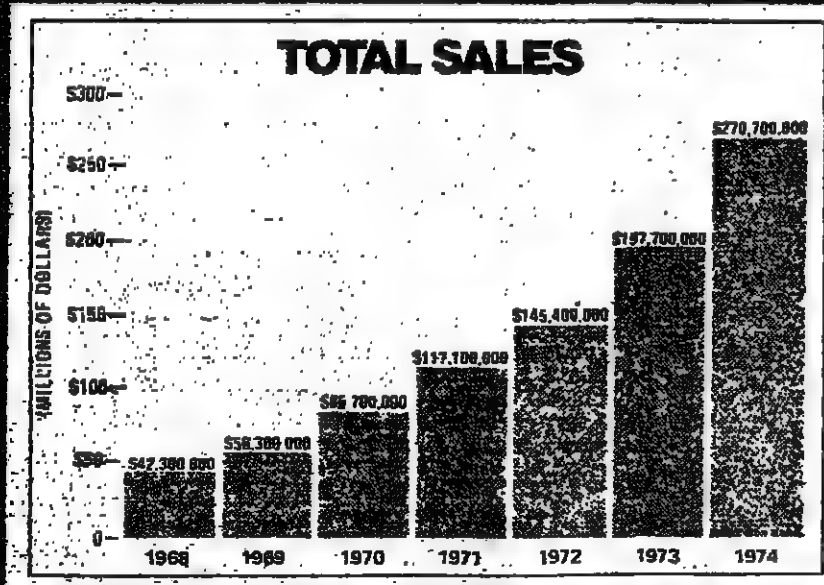
Expenditure

But all this, plus the repair and maintenance of Italian Air Force and NATO aircraft, is relatively small beer and Aeritalia's main hopes for the future lies largely in a Government decision on re-equipping the Italian Air Force. A draft Bill is presently under preparation by the Ministry of Defence which calls for the expenditure of Lire 1,265bn. (£850m.) over the next ten years on aircraft procurement starting with Lire 50bn. in 1976, rising to Lire 144bn. by 1979 and Lire 157bn. in the three years 1981-83. The bulk of this expenditure would cover purchases of the Panavia MRCA for which Italy still has to place a firm order. This is the most important single military project in which Aeritalia is involved and Italian participation in the project is clearly linked to the prospect of Italian Air Force order.

Apart from the MRCA the draft Bill covers expenditure on modern radar, low-height missile interception systems, and replacement of the existing fighter and trainer aircraft. Italy's military expenditure is among the lowest in Europe. It has declined from 3.13 per cent. of the GNP in 1960 to 2.7 per cent. now and most of this is consumed in wages, salaries and current expenditure of all kinds. The Air Force, for example, has a mere Lire 80bn. (£55m.) annually for new equipment. This is one of the principal causes of the difficulties faced by the fledgling aerospace industry. The draft Bill, which is expected to be introduced in Parliament later this year, is an attempt to partially make up for the obsolescence which such a low level of investment has created.

CONTINUED ON NEXT PAGE

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Noise now a major issue

OVER THE past few years, noise from aircraft has become a major social and political issue, as communities around airports have become more conscious of their power in dealing with what they rightly regard as a deprivation of their basic right to live—and more particularly to sleep at night—in reasonable peace and quiet.

Virtually no major international airport in the world is now without some kind of environmental lobby—articulate, well-informed and highly capable of presenting a strong case against either continuation or escalation of the problem of aircraft noise that confronts them every day. In many instances, these lobbies have won notable victories. Had it not been for their pressures, for example, the U.S. Government would not have introduced, through the Federal Aviation Administration, the series of noise restrictions on jet passenger-transport aircraft collectively known as "Federal Aviation Regulations, Part 36" that now effectively govern what kind of noise levels shall be made around airports in the U.S. by subsonic jetliners, and which are widely accepted as a norm in many other parts of

the world. Outside the U.S., the world civil aviation industry, through the International Civil Aviation Organisation, has another similar set of guidelines, called Annex 16, which although not mandatory (as is the case in the U.S. of the Part 36 regulations) are nonetheless being applied increasingly in many countries.

Pressures

In the U.K., the pressures from the anti-noise organisations have succeeded—albeit only after a long, hard battle—in getting successive governments to introduce stringent regulations controlling the use of airports such as Heathrow and Gatwick, with the result that jet movements are now severely restricted in the night hours from 2330 to 0600. One of the ultimate ambitions of the noise lobbies is to get night jet movements at those airports banned entirely. In the U.K., the Government has amended the existing noise regulations so that noise certificates are required for newly produced models of existing types of subsonic jets (such as Trident, One-Eleven and Boeing 727s) on the British

register from January 1, 1976. For older models of these types, hush-kits are either already available (for the One-Eleven, for example) or are under development. In the longer-term, the Government wants to bring into the scope of noise controls all foreign-owned subsonic jet aircraft which are currently outside the existing regulations, by January 1, 1979.

Also in the U.K., efforts are being made to ameliorate noise by so varying the departure paths from Heathrow as to limit it to certain less-populated areas (the so-called "minimum noise routes"); by alternating landings and take-offs on the two Heathrow runways so that those living under the glide-paths have predictable periods of relative quiet; by giving sound insulation grants for homes in the Heathrow and Gatwick vicinities; and by operating "noise abatement procedures" soon after take-off, which are carefully monitored to ensure that aircraft do not exceed permitted noise levels.

At best, however, as the anti-noise lobbies are swift to point out, these are all panaceas for a problem that has existed for a very long time and which is getting worse as the volume of

world air traffic rises. The most effective way of preventing noise nuisance to communities, of course, would be to take all airports right away from built-up areas and set them on new coastal sites. The first major attempt to do this, however, with Maplin Sands, failed not only because of the vast scale of cash and other resources that would have been involved in the operation, but also because environmental groups in the East Essex area bitterly opposed having somebody else's problem dumped on their doorstep. As a result of the Maplin experience, it seems most unlikely that any efforts to build new coastal-sited airports will be attempted in this country for a very long time to come. Indeed, as a result of the combination of the Maplin experience, the current economic situation, and the decline in the rate of U.K. growth of air traffic, together with environmental objections, it seems highly unlikely that any new airports will be built anywhere in Britain at all for the foreseeable future, with the result that the air transport industry and the community will have to make the best of what they have now got, in every kind of way. This will almost

certainly mean a slow but going well beyond the achievement of existing noise controls at RB-211, will be an investment that will be rewarded many times over in the future. It will also be already being done, for example, by General Electric and Snecma of France with the new turbofan engines for the Conquest and by Pratt and Whitney with the JT10D, both of which are in the so-called "10 to 15" class, and are in the "go away, but rather one that tends for the next generation will get worse as time goes on."

Fringes

The point that needs to be recognised most of all, however, is that all of the efforts made hitherto to get aircraft noise under control round airports, they are only tackling the operational fringes of the problem. The real answer to cutting aircraft noise is to design, develop and manufacture a wide range of new types of engines, embodying all the techniques now available for getting noise down and even if necessary making a quantum jump into the future by anticipating the production of both quieter new engines and "hush kits" which can be retrofitted to older engines and aircraft.

From the air transport industry's point of view, the effect of the legislation in the U.S. where most of the world's jetliners are built has been that jets now rolling off the production lines are significantly quieter than their predecessors. It is recognised, for example, that the Lockheed L-1011 and McDonnell Douglas DC-10 are much quieter than the earlier Boeing 707, and Douglas DC-8s. The major problem seriously, and have spent and are still spending many millions of pounds on noise reduction research and in the production of both quieter new engines and "hush kits" which can be retrofitted to older engines and aircraft.

As a result, several further developments are now in prospect, aimed at getting aircraft noise levels down further. Once again, the U.S. appears to be spearheading the attack, at least in terms of regulatory procedures. One of the most significant of these appears to be the plan to introduce what are known as "Eject Noise Requirements"—a scheme whereby the noise level of an aircraft's entire fleet is required to be reduced to a certain level. The details of the scheme, spelled out in a "Notice of Proposed Rulemaking 74-14," include the provision that no domestic or foreign airline will be allowed to operate any aircraft unless one-half of its engines meet the FAR Part 36 noise levels by June 30, 1976, with all its aircraft being obliged to meet FAR Part 36 levels by June 30, 1978. These rules will cover all subsonic turbo-jet aircraft weighing more than 75,000 lbs. and all U.S.-registered aircraft and foreign aircraft operating from U.S. airports.

These proposed new regulations have given rise to an extensive research programme in the U.S. to devise techniques of retrofitting noise reduction devices to many of the older Boeing 707 and DC-8 jets, for example, which would be brought within the scope of the rules. Inevitably, the proposed regulations have given rise to strong complaints from the airlines and the manufacturers, who claimed that the retrofitting cost of older jets would amount to about \$1,000,000. It was—and is still being argued—that the cost of such a programme should come from both the users of air transport (probably through a levy on air tickets sold) and the general public, if yet another impending requirement in the U.S.—a further reduction in Part 36 engine noise levels for all new types of aircraft certificated henceforth.

One other area of noise reduction that is being explored in the U.S. is called the "two-segment approach"—a technique whereby an aircraft approaches an airport on a steeper (six degrees) glide-path than at present, flattening out to a normal three-degree glide-slope when closer to the runway threshold. This technique has been tested in the U.S. by United Airlines, and is regarded as being safe, but it is not yet being adopted by the Civil Aviation Authority, either that even if a go-ahead were given, it would be the British Air Line Pilots' Association as an acceptable means of noise abatement, and on all the aircraft using JT8D engines until about 1980, and on all the much older JT3D engines until about 1985. It would seem.

therefore, that before the U.S. goes ahead with this retrofitting programme, some modification will be necessary. The point is also made strongly by airlines and manufacturers that the economic penalty involved in retrofitting many of these older jets will not be justifiable, since many of them are regarded as "dirty" engines in today's environment of fuel restrictions and high fuel costs, and many of them are also nearing the end of their safe fatigue lives, so that they will be phasing out of service increasingly in the years ahead, with many of them going to the scrapyard.

By using a larger and quieter single-stage fan, and making other modifications inside the engine, it has been found possible to cut down the velocity of the jet exhaust and so reduce "jet noise," while by also introducing sound-absorbent materials inside the engine it has been possible to damp down "machinery" noise. The result is a significant reduction in overall engine noise. The programme, however, is that it cannot be used for any retrofit of existing engines, simply because of its cost. Boeing believes, however, that it does offer attractive potential for JT3D and other engines that are required for entirely new types of aircraft in the future. This will help, to meet yet another impending requirement in the U.S.—a further reduction in Part 36 engine noise levels for all new types of aircraft certificated henceforth.

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What the City makes of the Market

BY MICHAEL BLANDEN

THERE is little evidence that any of the main City institutions—the insurance companies, the banks and the Stock Exchange—have so far gained a significant direct benefit, commercial or financial, from British membership of the EEC. In some ways, the experience of the past two years has therefore been disappointing. Progress towards the unification of the European markets and free competition for financial business has been slow, while ideals of monetary and economic union have suffered a major setback. Again, in terms of the contribution made by European business to U.K. invisible earnings, although precise figures are hard to come by, the signs are that income has grown no faster than invisible trade with the rest of the world. Business in Europe has, it is thought, continued to provide between 15 and 20 per cent. of the total. While a good deal of attention has been paid to developing new contacts and relationships within Europe, the City has maintained its world-wide outlook. The U.K. banks, for example, have been building up their operations in North America at least as rapidly as in Europe.

Euphoria

Nevertheless, the City institutions are in favour of continued U.K. membership of the Community. The euphoria with which the prospect of EEC membership was greeted three or four years ago, when there was fairly widespread talk of London's taking over as the banking and insurance centre for the whole of Europe, has

been dampened by experience and by a greater degree of diplomacy in dealing with the sensibilities of the U.K.'s European partners. But there is a remarkable degree of unanimity within the insurance industry, banking and the Stock Exchange that withdrawal now would be a disaster both for the country as a whole and for the continued international strength of the City.

This has been clear from the public statements put out by the various representative institutions as well as from private conversations with a number of senior individuals. Even those who might have had some reservations about the initial decision to join the EEC have generally become convinced that to leave now would have serious adverse effects—in particular, that confidence in the country's ability to meet its commitments would be damaged.

Regulations

The conviction may also derive in part from the amount of work done by a number of people in the City, over the past two or three years in organising and influencing proposals for harmonisation of rules and regulations within the EEC. It is felt that substantial progress has been made by the U.K. in bringing about a more liberal and outward-looking EEC approach to these issues, and the people involved clearly have a commitment to seeing that their work is not wasted.

Fundamentally, however, the City support for the EEC rests on the conviction that its own activities, as well as the strength of the country, would be seriously damaged by withdrawal. Immediate advantages, most City people will agree, are not

easy to find, and there is little prospect of a large upsurge in business for the financial institutions. But in the long run, it is argued, the City will lose if the U.K. economy is weakened further—as it could be, if it is felt outside the Community—while if there should be some real progress towards monetary unification of the EEC there would be opportunities for a substantial growth of business in Europe.

It has been recognised from the start that there should be considerable opportunities for all the City institutions to play an important part in the development of the Community. In insurance, the British companies and Lloyd's between them have made London the undisputed insurance centre of the world. A background of liberal official regulation has enabled the industry to develop its extensive international as well as domestic business with little hindrance.

Eurocurrency

This provides a considerable contrast, it is argued, with the more restrictive and legalistic approach to regulation adopted in many Continental European countries, where insurance operations tend to be predominantly domestic in character. The strength of London's insurance market should be able to make an important contribution to the development of the Community.

Our overall economic security as a nation can now best be safeguarded by concerted action with our Community partners, and there is no viable alternative.

SIR JOHN PRIDEAUX, CHAIRMAN OF NATIONAL WESTMINSTER BANK AND OF THE COMMITTEE OF LONDON CLEARING BANKERS



Eurocurrency operations, which in the absence of European unity still represent the only real international capital market.

In stock market terms, the Stock Exchange operates on a scale unmatched in the rest of Europe. Its turnover is comparable in size to the rest of Europe's bourses put together in building up an international dealing network in Europe, therefore, there should be a chance for London to play a leading role.

These advantages and opportunities have, it is true, become less marked during the past two years. The weakness of the U.K. economy has not helped. The collapse of the stock market last year and the problems of brokers and jobbers have reduced confidence in the system. The problems of the secondary banks and the evident need for stronger supervision in that sector, as well as the moves towards stricter control of the insurance industry, have reduced the strength of London's case for self-regulation and maximum freedom of operation as against Continental regulatory systems. At the same time, the London institutions have become aware of the need to tread fairly delicately on the Continent, where people are naturally sensitive to high-priced claims that London is going to take over as the major centre, and of the considerable obstacles to extensive

development in Europe. Nevertheless, progress has been made in developing a Community atmosphere in London and in building the basis for a more active role in future. The Stock Exchange, for example, held a conference in Brussels shortly after the U.K. accession to explain its operations to Continental investors—a very necessary function because of the different market structure in London and the strict rules imposed on listed companies under the Exchange's regulations.

Listings

Efforts have been made, with some success, to elucidate the London listing requirements for Continental companies, and several have arranged to be quoted in the U.K. London, it is claimed, now provides the second most important market in French and German securities. In the other direction, U.K. companies have been obtaining listings in Continental centres. Several firms of London jobbers have begun to make markets in a range of Continental equities, achieving at times a fair amount of trading. The Stock Exchange itself is collaborating with Continental bourses in such areas as communications networks.

Similarly, in insurance and banking there is no doubt that

membership has concentrated the minds of management on the opportunities in Europe and on the need to build up representation there. While continuing with their general international business, insurance companies have arranged strong Continental links, such as the purchase of Delta-Lloyd in the Netherlands by Commercial Union. The banks have been building up their representation in Europe as part of their general efforts to increase their international coverage. The European feeling has come out most clearly in those banks which have been part of an EEC-oriented grouping.

Midland provides the main example with its connections with leading Continental banks through the European Banks International Company. This group has formed the main basis of Midland's overseas representation—including the recent joint acquisition of the Franklin National business—and its philosophy and origins are very much geared to the Community concept and the distant prospect of much closer co-operation in a future unified Common Market. Similar thinking lay behind the decision last year by Barclays to link itself with the Abn-Amro grouping of European banks.

But it is in the committees and consultation groups where the City feels that much of the best and most fruitful work has

been carried out in the past two years. These have been slow to produce results; but their effect on the ultimate aim of opening up the EEC to free competition could be substantial. The influence of the City has tended to be strongly against excessively restrictive legislation and rules, and in favour of flexible controls combined with an open approach influenced by the importance to London of its insurance and banking activities outside the EEC and of the large foreign banking community in the City.

While trying to protect these interests, the U.K. has had to recognise the inevitability of some form of tighter controls over the activities of, for example, banks. There is no doubt the City has been influenced in this by the weaknesses in its own system thrown up by the fringe bank collapses. Two achievements in this area can be singled out.

One is in the regulation of banking activities. Harmonisation in this field has been slow, because the initial effort to find a basis for it, in the original Commission proposals for detailed rules based on existing national regulations, came up against strong opposition not only from the U.K. but also from other countries. The new directive which could be adopted by the end of this year, adopts a far more pragmatic approach to the problem, attempting to set out basic principles of regulation while providing for future regular contact aimed at bringing the rules closer together. It would require the U.K. to adopt a positive system of bank licensing, and is far more acceptable in London than the previous efforts. Secondly, there have been the efforts towards free competition in insurance. Progress London and many Continental centres, to the benefit of both.

Solvency

There are major problems in the way of further progress, including technical issues like the level of solvency margins to be enforced and the confusion caused by recent European Court revisions. Nevertheless, the U.K. industry feels that it has achieved a great deal by getting the proposed rules to acknowledge the special character of Lloyd's—a unique institution which could benefit in, for example, the German and Italian markets—and in keeping a reasonably liberal approach.

This work is one of the reasons frequently cited for wanting to remain in the EEC. The City feels that outside, it would lose its influence on the future development of the Community, running the risk of being increasingly cut off from this market and conceivably from other countries in the developing world which could adopt a similar approach to legislation affecting the City. It also feels that the contacts developed have done a great deal already to overcome the wide differences of outlook between London and many Continental centres, to the benefit of both.

Letters to the Editor

Taxes on gains

From The Chairman, The Stock Exchange.

Sir,—Having seen your report of May 22, I would like to set out my Council's position. We already have a short-term gains tax which is quite high enough. If the Government retains capital gains tax, the Stock Exchange advocates a graduated tax with the rate reducing and finally disappearing according to the length of time investments are held. The Chancellor has stated publicly that he is considering these proposals.

Our evidence to the Parliamentary Committee considering the wealth tax contained the following statement: "The Stock Exchange would endorse the plan, flatly rejected in the Green Paper, that the investment income surcharge should be abolished, with the introduction of the wealth tax. The 2 per cent. transfer stamp duty should also be removed completely or at least harmonised with the EEC proposal to charge transfers at a rate of 0.5 per cent. Capital gains tax, which discourages the shift from a successful to a marginal investment, should also be abolished, as gains will be taxed ultimately by wealth tax or capital transfer tax. I think therefore that the Council's policy on these matters is quite clear. George A. Lovelady, The Stock Exchange, E.C.2.

Building new homes

From The President, The House-Builders Federation.

Sir,—It is reliably reported that the Government intend soon to be obliged to stop virtually all new council house building because local authorities may find themselves unable to service their debts which will total some £1.5bn by the end of the year. As recently as April 30 I warned that council housing subsidies were "one of the fastest growing sectors in the national economy" and further growth in the total stock of council dwellings could have disastrous consequences for the balance of housing finance in this country. I also said that a mammoth switch away from council housing towards owner-occupation would not only save millions of pounds but would do a great deal to restore the foundations of a sound economic policy in this country.

Whether it is the near-bankruptcy of local authorities or political pragmatism, or both, which dictate a halt to council house building is immaterial at this stage of events. The country must be ready with alternative forms of tenure. The private house-building industry which has been functioning at less than half its proven 1972-73 capacity of virtually 250,000 dwellings a year is ready, unable to provide new private housing for that 22 per cent. of local authority tenants with household incomes exceeding £5,000 per annum who may be encouraged to move out by the prospect announced by Mr. Croom of substantial rent rises in the near future, and also for young people prepared to take advantage of the new low-start mortgage scheme, who might otherwise occupy council housing.

With the exception of the cheapest properties, new house prices have been largely static during a 12-month period when the earnings of manual workers have risen by 33 per cent. and now average over £58 a week or £3,016 a year which should equal them for loans of £7,540. A deposit of modest proportions should thus bring the worker with average earnings into the private market for houses and flats in the £8,000-plus price range. A 25-year mortgage at 11 per cent. without counting tax relief, would cost just over £17 a week which is £2 less than thousands of people spend on running the family car. There would be no charge to the community.

If the house-builder, however, is to gear-up to an immediate programme of this size he will need to be assured of a steady supply of building land. The present prospect is of a land famine within two years, brought about by the prospect of Development Land Tax and the Community Land Bill. If the Government were prepared to postpone the implementation of these two questionable measures for a guaranteed period of not less than two years, I am sure the industry would make every effort to produce more than sufficient private houses, to make good the expected deficiency in the public sector.

R. M. Willan, The House-Builders Federation, 82, New Cavendish Street, W.1.

Azad Kashmir poll

From The Press Counsellor, Embassy of Pakistan.

Sir,—Your Asia Correspondent (May 16) has drawn a wholly untenable inference from the results of the general elections held in Azad Kashmir.

His claim that the victory of the People's Party in Azad Kashmir "would allow Pakistan to keep in step with moves made in Indian Kashmir" is tendentious. Prime Minister Bhutto has reaffirmed that Pakistan would firmly oppose the right of self-determination of the people of Kashmir and that the results of the general elections in Azad Kashmir would not alter that stand. It is unfortunate that your Asia Correspondent should have accepted an Indian official's version that, at the Simla conference of 1972, Mr. Bhutto and Mrs. Gandhi "agreed that the present line of control in Kashmir should be allowed to become the international boundary line." The text of the communiqué on the Simla agreement clearly states that the line of control will be "without prejudice to the recognised position of either side." Pakistan's "recognised position" is that the people of Kashmir must be allowed to exercise their right of self-determination through a plebiscite as envisaged in the United Nations resolutions. Abdul Qayyum, Embassy of Pakistan, 35, Laundress Square, S.W.1.

U.K. steel prices

From Mr. C. Maxwell-Smythe.

Sir,—After reading your article of May 22, I am more than ever convinced that Bob Scholey and his colleagues at BSC are living in a "cloud cuckoo land." If Mr. Scholey thinks for one moment that foreign steel producers will

raise their prices to keep pace with BSC is in my opinion sadly mistaken. As procurement officer of a company in the provinces I purchase over 500 tons of tool steel a year, and under present conditions I am forced to buy abroad on the grounds of price and delivery. I can negotiate fixed prices for one year and enjoy reliable delivery. Even under the present adverse currency exchange rates I can purchase German steel carriage and duty paid, cheaper than I can in the U.K.

I am gravely aware and concerned of the adverse balance of payments position to which I am contributing, but our products have no chance of competing on the export market by paying U.K. prices and being subject to U.K. unreliable deliveries. It is worth noting that private sector steel manufacturers in the Sheffield area are at last waking up to the fact that they must compete with foreign steel suppliers by bringing prices closer to those of landed imports, and this they are doing. Why doesn't BSC think on these lines with the possibility of creating more work and less redundancy and unemployment?

BSC has clearly decided to take the gamble that if it raises prices in Britain—its foreign competitors will raise their charges too rather than try to capture an ever bigger share of the market. They must be joking; and if they lose the gamble we will be in a bigger mess than ever, especially as the corporation has almost a complete monopoly in the production of basic ingots and billets. C. Maxwell-Smythe, Cheyney Meuse, Buxton, Derbyshire.

Convertible stocks

From The Investment Manager, United Building Society.

Sir,—Since his recent excursion to these shores your correspondent, Joel Stein, has added South Africa to his list of securities markets which are dominated by "financially astute" investors, in his interpretation of the phrase. He is over sanguine. The decision makers who dominate investment thinking in this country may well be astute and sophisticated, but their astuteness and sophistication is in the area of mass psychology and not in the rigorous and austere intellectual milieu that is ruled over by Professors Modigliani and Miller.

The South African stock market is characterised by several cases of widely held securities which are as nearly identical as makes no difference, and which consistently trade at materially different prices. In the specific area of convertible stocks, the subject of his article of May 16, the case of South African Breweries convertible preference shares is the most prominent example of the real world thumbing its nose at Chicago logic. These convertibles have consistently traded at a price far too high to be justified either by their value as straightforward preference shares, or as rights to a high interim income followed by an equity right at the appointed date. I have discussed this anomaly with numerous investment professionals in Johannesburg, and the comment has invariably been that they constitute a reasonable investment at the inflated price, on the basis of the "greater fool" approach. Some of those who have made this

comment have been aware of the mathematical paradox; others have not been but most have felt that it is largely irrelevant to the proper assessment of the investment merits of these convertible preference shares.

It should be added that both the ordinary shares and the convertible preference shares of South African Breweries are quoted in London, as are other examples of anomalously priced South African securities. The astute and sophisticated investors who dominate that market have also failed to eliminate the anomaly.

Financial markets with a high degree of theoretical efficiency are patently less common than Mr. Stein believes. "Free lunches" must be commoner. P. A. Kerbel, United Building, Fox and Eloff Sts., Johannesburg, P.O. Box 7735.

Spain and Europe

From The Hon. T. Prittle.

Sir,—Your admirable editorial of May 22, pointed out the availability of securing Spain's closer association with Nato. Some voices will be raised suggesting that Spain will not be a suitable "partner" for Nato because its system of Government is not a British-style parliamentary democracy. I believe that this sort of objection is utterly invalid.

Political liberalisation began a long time ago in Spain. It is of crucial importance that this process should be allowed to continue quietly, steadily and at a pace consistent with the mentality and the needs of the Spanish people. Any kind of "Portuguese" situation in Spain would be yet another setback to the stability of Europe and the whole western world.

Both Europe, and the rest of the western world, need Spain, a friend and ally, and ever more closely associated with Nato and the EEC. Spain will make her own way, towards internal liberalisation and towards closer association within Europe, along her own pace—and must be allowed to do so. T. C. F. Prittle, Britain and Israel, 15, Uxbridge Street, W.8.

Home for the Mayor

From Mr. J. Corliss.

Sir,—As a resident of Rio de Janeiro when the British Embassy was built, I was interested in the article, "Home for the Mayor at Last," by Observer in Men and Matters (May 20). In quoting £100,000 as the cost of the building in the late 1940s, I am afraid that you are very far from the mark. Though I believe that the cost of the land and buildings was very much more than £100,000, I quote from Illustrated of August 26, 1950: "Amid the palm trees down in Rio de Janeiro is a stately home of England. To build it cost £400,000, three years' work, and the labour of shipping precious antiques 6,000 miles across the Atlantic." If, however, we accept the figure of £400,000 for the cost, how does this compare with the suggested minimum of £1m. which you mention for offices to-day? Not very much real profit in real terms—I would imagine. J. S. Corliss, The Vine House, Sevenoaks Kent.

To-day's Events

GENERAL
President Giscard d'Estaing of France has talks with Dr. Henry Kissinger, U.S. Secretary of State, Paris. Dr. Kissinger also attends a meeting of governing body of International Energy Agency in Paris.
World Aerospace and Air Defence Industries two-day conference, organised by the Financial Times, opens, Hotel Meridien, Paris. Chairmen for the first day are: Sir Kenneth Keith, chairman of Rolls-Royce (1971), and Hill Samuel Group, and Mr. Geoffrey Knight, vice-chairman of British Aircraft Corporation. European Space Agency holds exhibition of projects under development, Paris.
COMPANY RESULTS
C. E. Heath (full year). William Mallinson and Denny Mott (full year). Teacher (Distillers) (full year).

ROYCE (1971), and Hill Samuel Group, and Mr. Geoffrey Knight, vice-chairman of British Aircraft Corporation. European Space Agency holds exhibition of projects under development, Paris.
COMPANY RESULTS
C. E. Heath (full year). William Mallinson and Denny Mott (full year). Teacher (Distillers) (full year).

Gomme Holdings (half year). House of Fraser (first quarter). See Week's Financial Diary on page 4.
CONFERENCES
Association of Teachers in Technical Institutions, Scarborough. Co-operative Union, Edinburgh.

Footwear and Allied Trades, Eastbourne. National Association of Head Teachers, Harrogate.
MUSIC
Royal Philharmonic Orchestra, conductor Lawrence Foster, with Pinchas Zukerman (violin), plays music by Gordon Crosse, Tchaikovsky and Mendelssohn, Royal Festival Hall, London, 8 p.m. Sylvia Marlow (harpichord) plays works by Bach, Purcell Room, London, 7.30 p.m.

SCHLESINGER PENSION FUND MANAGEMENT

"...split fund management works..."

Peter Baker, Schlesinger Investment Director

In the USA, the appointment of several investment managers to a large pension fund is standard practice. In the UK this excellent procedure is followed by only a few major funds.

Trials for "splitting" management of a pension fund may be made quite simple. If trustees split the fund management, it is usually the case that the managers will tend to try harder!

Most companies have to compete to survive in today's very competitive markets. Competition increases the efforts of their management team.

So it is with pension fund management. Where there are competing investment managers, they will all be working hard for successful results.

It is, of course, essential that the appointment of competing managers is handled professionally. Investment results should not be assessed on a short term basis. A most important consideration is the appointment of investment managers to large pension funds is for the Trustees to be aware of the managers' investment philosophy.

The Schlesinger investment philosophy can be summarised in these eight points:

- An international approach to portfolio management.
- An emphasis on quality companies.
- A specialisation in active management of Glits.
- An emphasis on the medium to long term view, reflecting the nature of pension fund liabilities.
- The avoidance of the \$ premium to the greatest extent possible under Exchange Control Regulations, by the use of foreign currency borrowing facilities. (We consider the \$ premium a high risk, low yielding investment.)
- A belief in concentrated portfolios (no fewer than 25 holdings; no more than 75 holdings).

• An emphasis on total return (income yield and capital appreciation combined) whilst recognising the importance of income yield to a tax pension fund.

• A professional attitude to the measurement of risk, and the avoidance of undue risk. It is well known in the City that Schlesinger were strong buyers of US and UK Equities, and Glits, towards the end of 1974 and into 1975, 20 portfolios under Schlesinger management have achieved substantial growth. In the last 12 months, Schlesinger managed the British American Growth Fund, for example, since its inception in August 1974, has risen by 11.6% against a rise in the Dow Jones Index of 6.8%. This fund is up by 87.2% in 1975 to date.

The Schlesinger investment team led by investment director Peter Baker, has extensive experience of institutional investment management—Schlesinger already manages institutional portfolios, pension fund accounts, the PIMS unit funds and private client portfolios totalling £20 million.

The investment team has also been responsible for the excellent results achieved by the Trident Managed Portfolio Range of insurance funds. As these are unitised and quoted publicly, the measurement of their investment performance is easily calculated. These funds were launched in August 1973 and have achieved a relatively good performance against a difficult market background, as you will see below:

From inception August 1973 to May 20, 1975	
Trident Managed Fund	+11.2%
Trident Guaranteed Managed Fund	+19.3%
Trident High Yield Fund	+16.2%
Financial Times 30 Share Index	+8.6%
Financial Times Actuaries All Share Index	+8.3%

All figures include reinvested income

Schlesinger—active management brings results

Contact P C Baker MA ACA
Schlesinger Investment Management Services Limited
19 Hanover Square, London W1A 1DU, Telephone 01-409 3100

OVERSEAS MARKETS

Canada higher in light trading

BY OUR CANADA CORRESPONDENT

WITH THE exception of utilities, Metals 0.15 to 73.98, Western Oils which shed 0.37 to 131.59 on index, 0.70 to 181.57, Banks 0.53 to 263.40 all sectors finished higher in light trading on Canadian Stock Markets to-day.

Golds advanced 9.98 to 423.98 on index to lead other sectors to

New York Stock Markets were closed yesterday for Memorial Day.

moderate improvements. Industrials firmed 0.20 to 187.59. Base put on \$1 to \$83.

Indices

NEW YORK

DOW JONES AVERAGES

Home	Foreign	Indus	Util	Transp	Govt
May 22	161.92	181.92	171.17	17.17	17.17
May 21	161.92	181.92	171.17	17.17	17.17
May 20	161.92	181.92	171.17	17.17	17.17
May 19	161.92	181.92	171.17	17.17	17.17
May 18	161.92	181.92	171.17	17.17	17.17
May 17	161.92	181.92	171.17	17.17	17.17
May 16	161.92	181.92	171.17	17.17	17.17
May 15	161.92	181.92	171.17	17.17	17.17
May 14	161.92	181.92	171.17	17.17	17.17
May 13	161.92	181.92	171.17	17.17	17.17
May 12	161.92	181.92	171.17	17.17	17.17
May 11	161.92	181.92	171.17	17.17	17.17
May 10	161.92	181.92	171.17	17.17	17.17
May 9	161.92	181.92	171.17	17.17	17.17
May 8	161.92	181.92	171.17	17.17	17.17
May 7	161.92	181.92	171.17	17.17	17.17
May 6	161.92	181.92	171.17	17.17	17.17
May 5	161.92	181.92	171.17	17.17	17.17
May 4	161.92	181.92	171.17	17.17	17.17
May 3	161.92	181.92	171.17	17.17	17.17
May 2	161.92	181.92	171.17	17.17	17.17
May 1	161.92	181.92	171.17	17.17	17.17

STOCK AND BOND YIELDS

Ind. Ord. Yield	Govt. Bond Yield	Corp. Bond Yield
May 22	10.15	10.15
May 21	10.15	10.15
May 20	10.15	10.15
May 19	10.15	10.15
May 18	10.15	10.15
May 17	10.15	10.15
May 16	10.15	10.15
May 15	10.15	10.15
May 14	10.15	10.15
May 13	10.15	10.15
May 12	10.15	10.15
May 11	10.15	10.15
May 10	10.15	10.15
May 9	10.15	10.15
May 8	10.15	10.15
May 7	10.15	10.15
May 6	10.15	10.15
May 5	10.15	10.15
May 4	10.15	10.15
May 3	10.15	10.15
May 2	10.15	10.15
May 1	10.15	10.15

FRIDAY'S ACTIVE STOCKS

Stock	Price	Change
Alcan	10.15	+0.15
Bank of Montreal	10.15	+0.15
Imperial Oil	10.15	+0.15
Manitoba Hydro	10.15	+0.15
Noranda	10.15	+0.15
Papier Mill	10.15	+0.15
Placer Dome	10.15	+0.15
Shawmut	10.15	+0.15
Union Pacific	10.15	+0.15
Western Union	10.15	+0.15

IND. DIVIDEND YIELD P.C.

Dividend	Yield
May 22	10.15
May 21	10.15
May 20	10.15
May 19	10.15
May 18	10.15
May 17	10.15
May 16	10.15
May 15	10.15
May 14	10.15
May 13	10.15
May 12	10.15
May 11	10.15
May 10	10.15
May 9	10.15
May 8	10.15
May 7	10.15
May 6	10.15
May 5	10.15
May 4	10.15
May 3	10.15
May 2	10.15
May 1	10.15

N.Y. SE ALL COM INDEX

Index	Value
May 22	10.15
May 21	10.15
May 20	10.15
May 19	10.15
May 18	10.15
May 17	10.15
May 16	10.15
May 15	10.15
May 14	10.15
May 13	10.15
May 12	10.15
May 11	10.15
May 10	10.15
May 9	10.15
May 8	10.15
May 7	10.15
May 6	10.15
May 5	10.15
May 4	10.15
May 3	10.15
May 2	10.15
May 1	10.15

RISES AND FALLS

Stock	Price	Change
Alcan	10.15	+0.15
Bank of Montreal	10.15	+0.15
Imperial Oil	10.15	+0.15
Manitoba Hydro	10.15	+0.15
Noranda	10.15	+0.15
Papier Mill	10.15	+0.15
Placer Dome	10.15	+0.15
Shawmut	10.15	+0.15
Union Pacific	10.15	+0.15
Western Union	10.15	+0.15

AMERICAN SE MARKET VALUE

Market	Value
May 22	10.15
May 21	10.15
May 20	10.15
May 19	10.15
May 18	10.15
May 17	10.15
May 16	10.15
May 15	10.15
May 14	10.15
May 13	10.15
May 12	10.15
May 11	10.15
May 10	10.15
May 9	10.15
May 8	10.15
May 7	10.15
May 6	10.15
May 5	10.15
May 4	10.15
May 3	10.15
May 2	10.15
May 1	10.15

JOHANNESBURG

Stock	Price	Change
Alcan	10.15	+0.15
Bank of Montreal	10.15	+0.15
Imperial Oil	10.15	+0.15
Manitoba Hydro	10.15	+0.15
Noranda	10.15	+0.15
Papier Mill	10.15	+0.15
Placer Dome	10.15	+0.15
Shawmut	10.15	+0.15
Union Pacific	10.15	+0.15
Western Union	10.15	+0.15

OVERSEAS SHARE INFORMATION

Stock	Price	Change
Alcan	10.15	+0.15
Bank of Montreal	10.15	+0.15
Imperial Oil	10.15	+0.15
Manitoba Hydro	10.15	+0.15
Noranda	10.15	+0.15
Papier Mill	10.15	+0.15
Placer Dome	10.15	+0.15
Shawmut	10.15	+0.15
Union Pacific	10.15	+0.15
Western Union	10.15	+0.15

NEW YORK

Stock	Price	Change
Alcan	10.15	+0.15
Bank of Montreal	10.15	+0.15
Imperial Oil	10.15	+0.15
Manitoba Hydro	10.15	+0.15
Noranda	10.15	+0.15
Papier Mill	10.15	+0.15
Placer Dome	10.15	+0.15
Shawmut	10.15	+0.15
Union Pacific	10.15	+0.15
Western Union	10.15	+0.15

STOCK

Stock	Price	Change
Alcan	10.15	+0.15
Bank of Montreal	10.15	+0.15
Imperial Oil	10.15	+0.15
Manitoba Hydro	10.15	+0.15
Noranda	10.15	+0.15
Papier Mill	10.15	+0.15
Placer Dome	10.15	+0.15
Shawmut	10.15	+0.15
Union Pacific	10.15	+0.15
Western Union	10.15	+0.15

BOND

Bond	Price	Change
Alcan	10.15	+0.15
Bank of Montreal	10.15	+0.15
Imperial Oil	10.15	+0.15
Manitoba Hydro	10.15	+0.15
Noranda	10.15	+0.15
Papier Mill	10.15	+0.15
Placer Dome	10.15	+0.15
Shawmut	10.15	+0.15
Union Pacific	10.15	+0.15
Western Union	10.15	+0.15

COMMODITIES

Commodity	Price	Change
Alcan	10.15	+0.15
Bank of Montreal	10.15	+0.15
Imperial Oil	10.15	+0.15
Manitoba Hydro	10.15	+0.15
Noranda	10.15	+0.15
Papier Mill	10.15	+0.15
Placer Dome	10.15	+0.15
Shawmut	10.15	+0.15
Union Pacific	10.15	+0.15
Western Union	10.15	+0.15

FINANCIAL

Financial	Price	Change
Alcan	10.15	+0.15
Bank of Montreal	10.15	+0.15
Imperial Oil	10.15	+0.15
Manitoba Hydro	10.15	+0.15
Noranda	10.15	+0.15
Papier Mill	10.15	+0.15
Placer Dome	10.15	+0.15
Shawmut	10.15	+0.15
Union Pacific	10.15	+0.15
Western Union	10.15	+0.15

INDEX

Index	Value
May 22	10.15
May 21	10.15
May 20	10.15
May 19	10.15
May 18	10.15
May 17	10.15
May 16	10.15
May 15	10.15
May 14	10.15
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May 12	10.15
May 11	10.15
May 10	10.15
May 9	10.15
May 8	10.15
May 7	10.15
May 6	10.15
May 5	10.15
May 4	10.15
May 3	10.15
May 2	10.15
May 1	10.15

STOCK

Stock	Price	Change
Alcan	10.15	+0.15
Bank of Montreal	10.15	+0.15
Imperial Oil	10.15	+0.15
Manitoba Hydro	10.15	+0.15
Noranda	10.15	+0.15
Papier Mill	10.15	+0.15
Placer Dome	10.15	+0.15
Shawmut	10.15	+0.15
Union Pacific	10.15	+0.15
Western Union	10.15	+0.15

BOND

Bond	Price	Change
Alcan	10.15	+0.15
Bank of Montreal	10.15	+0.15
Imperial Oil	10.15	+0.15
Manitoba Hydro	10.15	+0.15
Noranda	10.15	+0.15
Papier Mill	10.15	+0.15
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COMMODITIES

Commodity	Price	Change
Alcan	10.15	+0.15
Bank of Montreal	10.15	+0.15
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Placer Dome	10.15	+0.15
Shawmut	10.15	+0.15
Union Pacific	10.15	+0.15
Western Union	10.15	+0.15

FINANCIAL

Financial	Price	Change
Alcan	10.15	+0.15
Bank of Montreal	10.15	+0.15
Imperial Oil	10.15	+0.15
Manitoba Hydro	10.15	+0.15
Noranda	10.15	+0.15
Papier Mill	10.15	+0.15
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Shawmut	10.15	+0.15
Union Pacific	10.15	+0.15
Western Union	10.15	+0.15

INDEX

Index	Value
May 22	10.15
May 21	10.15
May 20	10.15
May 19	10.15
May 18	10.15
May 17	10.15
May 16	10.15
May 15	10.15
May 14	10.15
May 13	10.15
May 12	10.15
May 11	10.15
May 10	10.15
May 9	10.15
May 8	10.15
May 7	10.15
May 6	10.15
May 5	10.15
May 4	10.15
May 3	10.15
May 2	10.15
May 1	10.15

OTHER MARKETS

PARIS—The market was steady after a hesitant opening, encouraged by the start of drilling in the Mer d'Iroise in the absence of other factors with London and Wall Street closed.

Oils were strong, Motors and Foods were well maintained, while most other sectors were narrowly mixed.

Denise firmed Frs.0.5 to 163.5 after announcing a rights issue. Lafarge stiffened Frs.0.3 to 173.1 following turnover announcement.

"A" gained \$3 to \$493 and Acres to \$84.

Francisco Oil and Gas lost \$3 to \$89, as did Traders Group "A" to \$33, but Falconbridge Nickel rose \$3 to \$364, Canadian Tire "A" gained \$3 to \$493 and Acres to \$84.

STANDARD AND POORS U.S. STOCK INDICES

Index	Value
May 22	10.15
May 21	10.15
May 20	10.15
May 19	10.15

FINANCIAL TIMES SURVEY

Tuesday May 27 1975

BRAZILIAN INDUSTRY

Brazil now produces well over a quarter of all the industrial goods manufactured in Latin America. The signs are that financial and political pressures and the need to redistribute income will make the expansion of the internal market the main spur to industrial growth in the future. But there is no indication that the country will lose its industrial dominance over the rest of the region.

OVER THE past decade foods and domestic equipment to Brazilian industry has reached a whole range of automotive levels of development that few products and eventually simple people could have foreseen at airframes.

At the end of World War II, the present industrial structure is principally due, to the foresight of the Governments of the time in taking advantage of broad changes in world trade. The scarcities produced in the peripheral countries during World War II was a powerful boost to the establishment of the bedrock of industrial production. Because Brazil could not import the goods that it had hitherto relied on obtaining from the industrial countries of the North Atlantic it started to make them at home. This impetus was maintained long after the former suppliers were again in a position to send to Brazil what they had previously sent. Behind a tariff wall which became progressively more difficult to mount foreign competition was prevented from reaching those parts of the domestic market that Brazilian manufacturers themselves felt they could satisfy.

in the industrial development ability to pay, it has awoken
of the country. no little local resentment at the

The present faltering of world trade has made the prospects for the continuance of the exported industrial boom more problematical. The old days when world trade gave the impression of being likely to go on expanding ad infinitum and

a period where the principal spur for the manufacturer will not be the foreign market, whose doors are in danger of being shut to him, but the certain expansion of the buying power of the local market. The room for such expansion is immense. There are tens of millions of Brazilians who are

Need for home demand

By HUGH O'SHAUGHNESSY, Latin America Correspondent

Multiplied

In the course of this process which lasted until only a few years ago the variety of products which Brazilian manufacturers became able to produce behind tariff barriers multiplied from the simplest processed

tion abroad and a growing traffic in industrial fairs all spurred the manufacturers to an export frenzy.

Now however there are signs that the strategy is once again changing and that 1975 could be the beginning of a new stage

demand an inexhaustible : The concentration of indus-
treating for industrial goods trial power in Sao Paulo
which Brazil would be ever has gone hand in hand
more efficient at producing with the enrichment of Sao
over. As explained elsewhere Paulo and continuing bad living
in this survey the pall of foreign conditions for the many and with
protectionism is hanging over the increasing disparities be-
the once bright prospects of tween the more and the less de-
the textile industry and the shoe vated regions of the country.
industry as the industrialised For all these reasons the present
nations look with alarm at their Brazilian leader General Ernesto
own balance of payments. Geisel has seen the political

virtually outside the money economy, particularly in the North-East, and tens of millions more who are on the borderline between poverty and a reasonably adequate living standard. The provision of reasonable incomes for these people, though the complete process will take several decades, would very well make up for the restrictions that can be

came from the Brazilian Air Force.

The State sector is also likely to become more dominant if, as seems certain, the Latin American attitudes to foreign transnationals hardens and there are moves to establish powerful locally owned multinationals in the region. The United Nations Economic Commission for Latin America (ECLA) meeting in Port of Spain earlier this month came out in favour of such a scheme, particularly for the capital.

As the biggest industrial power in Latin America, Brazil will be called upon, and will doubtless accept, the invitation to participate in the foundation of such new enterprises. With a growth rate of 9.9 per cent in the first three years of the 1970s and a 13.7 per cent growth in 1973 Brazil already accounts for no less than 28 per cent of Latin America's total output of manufactures.

oods, chemicals and consumer durables sectors in the light of the fact that Latin America as a whole is importing more than \$11bn. worth of such products every year from the U.S. and the EEC and Japan.

The idea of establishing Latin American multinationals was also endorsed by the Inter-American Development Bank at its recent meeting in Santo Domingo and the bank is pledged to spend much of the \$500m. which Venezuela placed at its disposal in a trust fund to

Through the pace of overall development is sure to slow down from the dizzy speeds it reached in the immediate past and though there is a growing consciousness in Brazil that the farm sector must start getting some of the close attention from the Government that industry has been monopolising over the last decade, all the indications are that Brazil will continue for the foreseeable future to retain the leadership in Latin America's push towards industrialisation.

**If business is looking gloomy
you may just be
looking in the wrong direction**

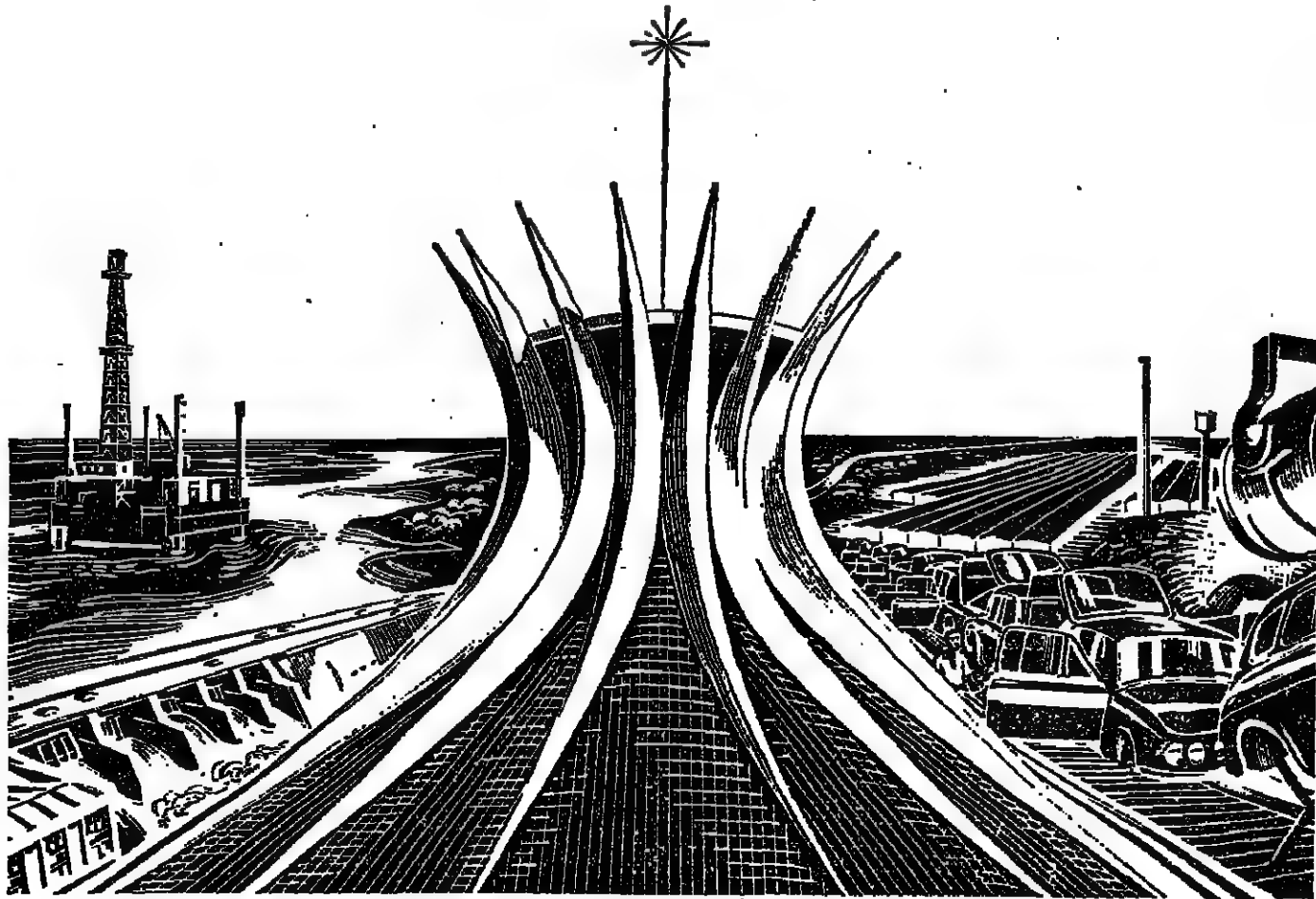
If it would surprise you to learn of a country the size of a continent, with vast natural resources, that has enjoyed economic growth of 9-11 1/2% a year since 1968, that has a domestic market comprising more than 100 million people, and that has increased its international trade by 300% in the last six years—it's time you discovered Brazil.

And nobody, probably, can help you do it more efficiently than Banco do Brasil—by far the largest and most experienced financial institution in the area.

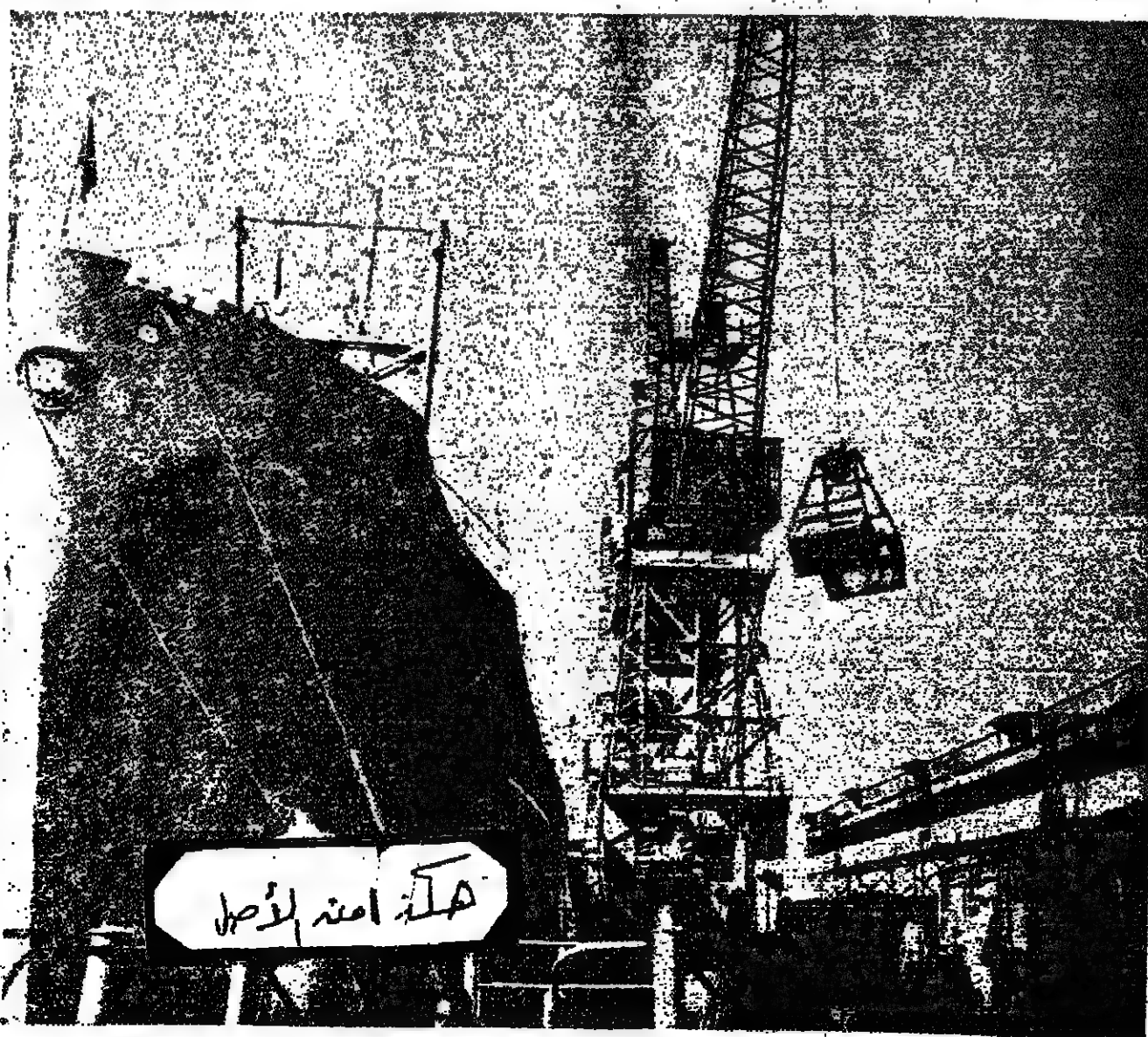
We'd like to tell you about opportunities for profitable investment in Brazil; and to introduce you to potential partners, customers and suppliers.

And we'd also like to put our full range of international banking services at your disposal.

Call Banco do Brasil soon. We think we can be of considerable help—at a time when you'll be wanting to take all the opportunities you can get.



**Sul América
has been exporting
insurance since 1897.**



In 1897, Sul América was born in Brazil. Two years later, Sul América found its way to Argentina, and since then has been doing steady climb on the map and growth charts. So far, Sul América has reached Peru, Chile, Ecuador, Cuba, Bahamas, Dominican Republic, United States and Spain.

Now, the Government has authorized Brazilian insurance groups to operate in foreign countries. They are starting to do what *Sul America* has been doing in the past 78 years. When *Sul America* began, nobody could imagine that it would end up with such a big slice of the world.

BANCO DO BRASIL S.A.

Growth is our business. Shouldn't it be yours?

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Opening shortly: Los Angeles, Beirut, Rome, Stockholm, Toronto, Caracas, Cochabamba and Puerto Strossener. Banking correspondents throughout the world.

London Branch: 16/17 King Street, EC2P 2NA. Telephone: 01-606 7101. Telex: 888698.

GRUPO SUL AMÉRICA DE SEGUROS

BRAZILIAN INDUSTRY II

Providing the finance

TO CARRY OUT its 2nd National Development Plan, which covers the four-year period 1975-79, Brazil needs to make total investments to the value of U.S.\$1,000bn, of which U.S.\$400bn. are to be channelled into the industrial sector. These figures show that Brazil has taken on a very ambitious programme for a country with a present GDP of about U.S.\$80bn. and a per capita income of about U.S.\$800. Gross fixed investments of about U.S.\$14bn., were made in Brazil last year, the aim is now to increase these investments to an annual average of U.S.\$25bn. over the next four years. This is a considerable leap, and there are inevitably questions as to the precise sources of the additional funds for these investments.

The Minister of Planning, Sr. Reis Velloso, has claimed that 20 per cent. of these resources, that is about U.S.\$20bn. over the four years, will come from abroad. This is an optimistic estimate, given present conditions on the international capital market. However, Brazil's prospects are relatively good, for direct investments and loans to the value of U.S.\$5.6bn. entered the country last year, and loans worth U.S.\$1.4bn. have already been contracted in the first quarter of this year. The recent change in Brazilian legislation to allow foreign capital on the stock markets will also help to some degree.

Amortisation

Nevertheless, it is clear that most of the foreign resources will come in the form of loans, not investments, and there are evident disadvantages in relying heavily on this kind of foreign financing. The most important is the vicious circle that stems from a very large foreign debt. The more resources sucked up in amortisation payments and interest rates, the greater the need to increase the debt to cover these commitments. Brazil's gross foreign debt, currently about U.S.\$18bn., about one quarter of the GDP, is undoubtedly very high and will cause serious difficulties unless the country manages to increase its exports to much higher levels than last year's U.S.\$7.9bn.

It is inside the country, however, that four-fifths of the funds are to be raised. And what are prospects there? Even with foreign capital, the stock markets in Rio de Janeiro will be able to cover only a very small portion of the country's needs, not much more than 5

per cent. Private financial institutions provide some of the necessary resources; altogether it is estimated that they supplied about a quarter of the total investments of U.S.\$11bn. in 1973 and U.S.\$14bn. in 1974. Over three-quarters of these investments come from the building societies, while the share of the investment banks in the total is very small, less than 2 per cent. Indeed, apart from repass operations with government funds, the investment banks supply about 30 times more resources for working capital and short-term loans than for investment purposes, which alone shows that they are not fulfilling the function for which they were created.

Another reason why the private sector does not directly provide a larger share of investment capital is the large proportion of total private resources in the hands of the finance companies, whose activities are mainly geared to financing hire purchase operations. The net value of the bills of exchange in the hands of these companies shot up, from U.S.\$3.7bn. in 1972 to U.S.\$6.8bn. in 1974. It is possible to make an approximate calculation of most of the debts owed by the general public by adding this sum to the loans made by the National Housing Bank and the building societies. This figure reached U.S.\$13bn. in 1974; this is 22 per cent. of GDP, as compared with only 2.5 per cent. in 1966.

The high proportion of private resources in the hands of the finance companies acts as a powerful means of redistributing wealth from the bottom upwards, as the working class and middle sectors end up paying a very high price for their purchases. Although in the short term it artificially inflates demand for consumer goods, in the long term it channels resources into the higher income groups. As the distribution of wealth is already extremely unequal in Brazil, any factor that tends to increase this concentration will inevitably have a harmful effect on the domestic market.

Altogether, foreign resources and private enterprises do not provide more than about 40-45 per cent. of Brazil's gross fixed investments; the rest is provided by the Government. Over one-third of the resources come from three savings schemes (FGTS, PIS and PASEP) which are formed by obligatory deductions from wages and charges on companies for each registered worker. The funds

eventually revert to the workers, who can withdraw them in exceptional circumstances. The importance of these schemes as a source of Government resources has grown enormously in recent years, for while they contributed only U.S.\$1.3bn. in 1971, by 1974 they raised U.S.\$3.4bn. Criticisms have been raised as to the use the Government makes of these funds, for it mainly channels them into investment loans for the private sector.

Resources

Indexed treasury bonds (ORTN) are the most important single source of resources—U.S.\$4.8bn. in 1974. Next come the Government saving banks, which increased their deposits by over 100 per cent. in 1974, to U.S.\$3.1bn. This rapid rise was partly the result of the bankruptcy of a well-known private bank, Halles, which shook public confidence in the private banking system.

Altogether, from the three workers' savings schemes, Government savings deposits, housing bonds, long-term bank deposits and indexed treasury bonds, the Government obtained U.S.\$5.9bn. in 1972, U.S.\$8.8bn. in 1973 and U.S.\$13.5bn. in 1974.

To administer these and other government funds, large and efficient State-owned banks have developed. The expansion of the Banco do Brasil, in particular, has been phenomenal, with its capital growing 48 times in five years. By 1974 it was financing loans to the value of U.S.\$13bn., with 96 per cent. of these resources going to private enterprise. With its growth, the Banco do Brasil has also become more specialised. It is now mainly concerned to develop the country's rural sector and to support the export drive, opening new branches abroad and providing guarantees. Indeed, only 17 per cent. of its loans (U.S.\$2.2bn.) went to industry last year.

The reason for this is that BNDE, Banco Nacional de Desenvolvimento, the world's largest development bank, is increasingly taking over the Banco do Brasil's role in industry, as well as developing new functions in this sector. BNDE made loans to the value of U.S.\$2.9bn. last year, 80 per cent. of which went to industry. Moreover, within industry its main concern is now the private company. Whereas in 1968 its loans were more or less equally divided between private

and State-owned companies, by 1973 86 per cent. of its loans went to private companies.

And BNDE no longer provides just loans. It increasingly participates directly in private companies, generally with a minority share in the capital. With this objective, it created last year three subsidiary companies—Fibase, Embratel and Ibrasa—to buy up shares in private companies operating in what is considered a priority sector—industrial inputs, particularly non-ferrous metals, chemical products, paper and pulp, and capital goods. BNDE will also be increasing its loans to this sector and, out of the bank's estimated total loans of U.S.\$3.2bn., about U.S.\$1.8bn. will be channelled to these sectors this year.

BNDE is now the country's largest shareholder, with a total participation of about U.S.\$2.6bn. at the end of last year. Out of U.S.\$14bn. gross fixed investments last year in Brazil, BNDE provided about 10 per cent., about U.S.\$1.4bn. Moreover, it was involved in about 90 per cent. of these investments, as it nearly always provides 50 per cent. of the funds for a project, insisting that the other partners supply the rest.

In 1974, too, BNDE raised fresh resources worth U.S.\$1.6bn. Of this, 93 per cent. was obtained in Brazil and 7 per cent. abroad, mainly from the London Bank Libra, and the U.S. Morgan Guaranty Trust. Inside Brazil, its main source of funds are two of the forced savings schemes mentioned earlier (PIS and PASEP), which together supplied it with U.S.\$900m. last year. This year, BNDE is planning to double the resources it raises to U.S.\$3.2bn., of which U.S.\$1.6bn. will come from the PIS and PASEP schemes alone.

Because of its considerable and growing economic power, the bank has been accused of gradually nationalising the economy. The Government replies, however, that it is the failure of private enterprise to channel investments into crucial sectors, such as capital goods, that makes the growth of government financial institutions inevitable.

However, whatever some Brazilian businessmen may feel the main problems that Brazil is facing in its development plan do not stem from the increasing power of the Government's financial institutions and nationalised companies.

Susan Branford
São Paulo Correspondent

Migrant workers

MIGRANTS FROM THE provinces still arrive in São Paulo at the rate of one every eight minutes. In January, February and March over 15,700 of them, mostly untrained and many uneducated, came in the trains and buses that have long been feeding the sprawling growth of the South-East region.

However, in the past year the migratory movement from the outlying areas and the North-Eastern backlands has begun to ease up, partly because industries have been able to absorb more workers elsewhere. At the end of last year São Paulo found itself with a shortage of unskilled labour, and employers vied with each other to attract new arrivals. The change in events brought higher pay, free housing and, for some (or so it is said), the free services of prostitutes, but the shortage turned out to be temporary.

The real shortage is not numbers but skills. It is one of the apparent paradoxes of Brazil that while many of the population are unemployed or underemployed—or if they are employed can expect no more than the legal minimum wage (many earn less)—the country is desperately short of manpower. The lack of qualified personnel from executive level downwards is one of the constant limiting factors in the growth of the "modern sector" of the economy. University professors, boilermen, nuclear physicists, cooks, and salesmen: you name it, Brazil is short of them.

Possession of a qualification automatically entitles a worker to wages well above the minimum, and thus the training of the workforce is an important move not only towards industrial expansion but also towards a wider distribution of wealth.

This concern clearly plays an important part in the present Government's development thinking, which, according to

President Geisel, "after considerable conquests in the economic sector, is orientated, above all, towards social development." In a May Day address the general emphasised "the need progressively to improve our workforce, qualify it better, so as either to bring the worker better results from his labour, or for the country to grow with greater productivity."

The Government has earmarked \$20m. this year for a special "instruction" scheme known as Pimpo (Intensive Programme for Manpower Training), aiming to qualify 450,000 people in skilled and semi-skilled jobs.

The army, which itself often fills the manpower gap in the more distant development projects, also takes part in training for civilian trades. According to an army expert in the Labour Ministry, it is hoped to qualify 15,000 soldiers for jobs in manufacturing and service industries this year. The recently reinforced armed forces are now 208,000-strong, and ex-army personnel are "playing what seems to be an increasing role in the higher echelons of civilian business administration. Traditionally, the army has been the most effective vehicle of social mobility, particularly for the lower middle classes in the south of the country.

Full-time

Besides qualifying workers for jobs—for example in the steel industry, where they are urgently needed—the Government also plans to absorb large numbers of underemployed by ensuring an expansion of job opportunities. The five-year national development plan which started last year sets the target—and in the present economic situation it may be a difficult one—of a 3.5 per cent. annual growth, or 6.8m. jobs in five years. This is above the anticipated growth of the work-

force, 2.5 per cent. a year or 3.7m. in five years, which means that 3.8m. people who are now not properly employed should be absorbed into full-time work.

However, the best available data—a 1972 survey by the Brazilian Geographical and Statistical Institute (IBGE)—show that as many as 5.9m. people, excluding the whole Amazon region, either earned no money from their agricultural labour or worked for money for less than 15 hours a week. This total was more than the number of industrial workers in the survey.

In the agricultural regions, where 44 per cent. of Brazilians work, information about the labour market is inadequate and vague. In the non-agricultural sector, IBGE figures show that of a workforce of 49.5m., 1.5m. were unemployed, underemployed or half-time workers who would rather work full-time.

With the lack of specialised skills, 43 per cent. of the workforce, according to the IBGE, earns the minimum wage or less. This level was increased by 41 per cent. at the end of last month to between \$47 and \$67 according to regions—the largest increase in the past 10 years. The rise went a small part of the way to restoring the purchasing power lost by this large proportion of Brazilian workers since the military took over from the Leftist Goulart government. Estimates of how far real earnings have dropped vary, but the trades union research institute DIEESE claims that the minimum would have to rise to over \$175 a month before it equalled the level set in 1968.

However, the increase, which was well above the 25-26 per cent. official inflation rate over the previous 12 months, marked the first step towards narrowing the gross discrepancies in earnings. Though some were disappointed by the increase and by the fact that workers still earn less in the provinces

than in Rio de Janeiro or São Paulo, the rise is thought unlikely to have drastic repercussions on the inflation rate, while further increases are slated for the future. The Government has tabled a law disconnecting the minimum wage from the system on monetary correction in which it has acted as a base currency for interest rates, rents and magistrates' fines.

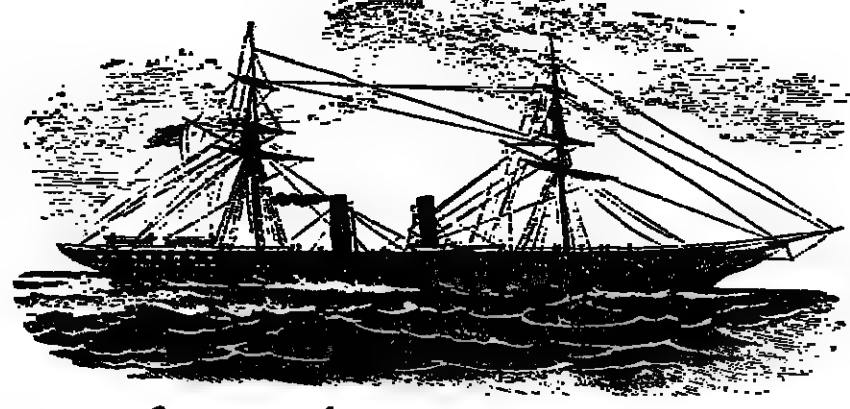
Shortage

In the heavily industrialised regions last year's temporary labour shortage led to sharp pay increases, but the number of jobs on offer in the production sector has declined this year. The biggest demand remains for the highly skilled worker who can expect to earn five times minimum wages or more.

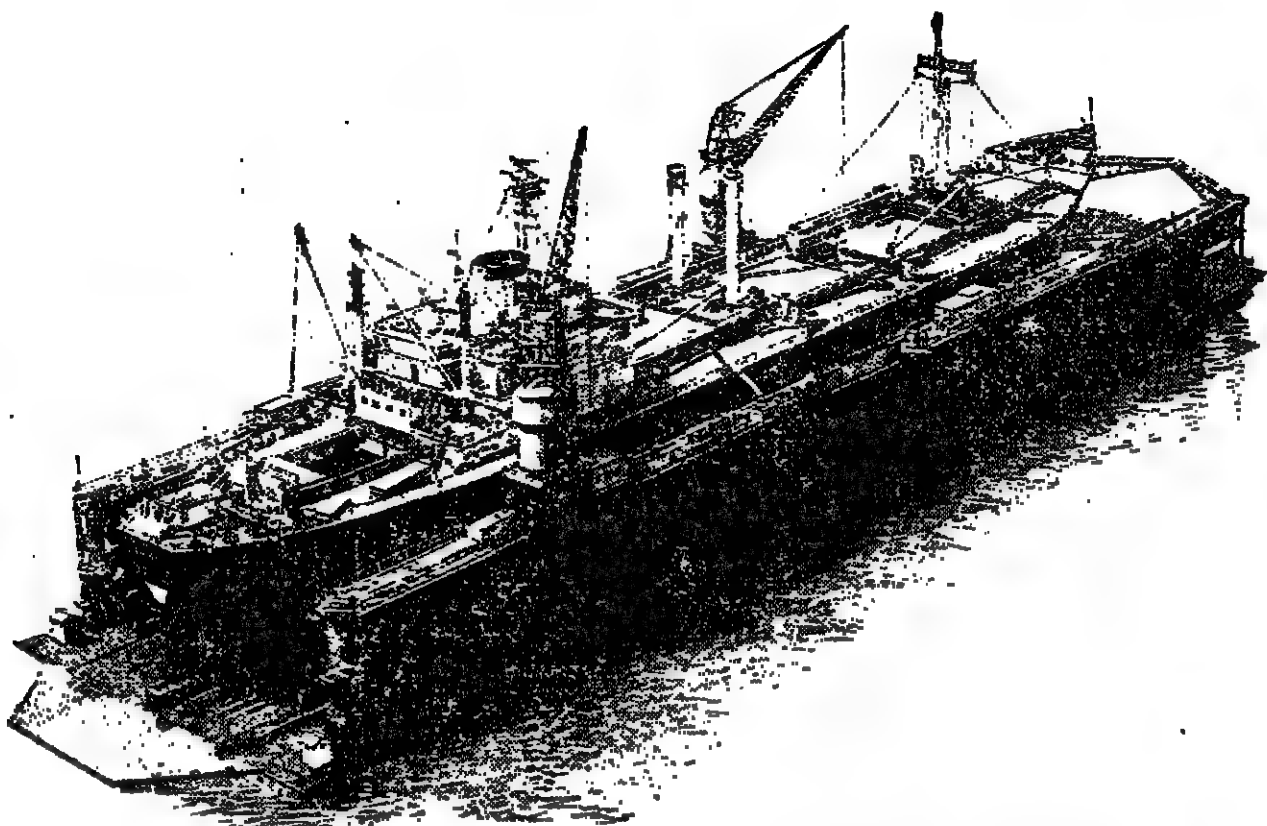
Despite this, labour costs even in advanced industries are still relatively low. Where in Britain or the U.S. they might account for 30-35 per cent. of total costs, in Brazil the proportion would be between five and 15 per cent. A semi-skilled car worker in the industrial belt of São Paulo—considered a good job—earns about \$100 a month roughly half what a U.S. car worker can earn in a week.

Unions, which have faced systematic repression under the military, are generally weak organisations, although the Government has recently withdrawn its "interventors" from some of the more troublesome ones. Strikes are illegal and there has been no major stoppage since the São Paulo metalworkers struck in 1968. Dockers in Rio won their case for new working conditions in a go-slow last year, and car workers staged fairly frequent work-to-rules, but the Government has usually managed to prevent or overrule the election of militant candidates to union posts.

David White
Rio de Janeiro Correspondent



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BRAZILIAN INDUSTRY III

Development gap between regions

TWO REGIONS in particular in Brazil have traditionally been excluded from the mainstream of the country's process of economic development: the Amazon and the North-East. As has been observed in many other parts of the world, the very dynamics of national development: par-

Deductions

The scheme has now been operating for over 14 years in the North-East and, by March 1975, 1,100 projects had been approved. They involve total investments of about half of which are to come from tax reductions. About nine-tenths of the projects are in the industrial sector.

By January 1975 SUDAM had approved 511 projects, with total investments of £540bn., of which £300bn. are to come from the tax incentives. About three-fifths of these projects are in the agricultural and farm husbandry sector, particularly cattle raising.

though it covers only 15 per cent of national territory. On the other hand, the Amazon region is still largely uninhabited: it covers 42 per cent of the territory while containing about 3.8m. people, about 4 per cent of the population. In other words, the main problem in the Amazon region has always been exclusion from the process of economic development; whereas in the North-East the chief difficulty lies in its exploitation by the more developed South.

Population

Because of the North-East's large population, its backwardness was the object of serious government study and considerable financial aid. The first important step was given in the Amazon, in the late 1950s when attention was drawn to the fact that the North-East was benefiting relatively little from the development boom that was occurring in the South, particularly in the State of São Paulo, with the growth of the country's industrial sector.

As a result, in 1980 the Government created SUDENE, the Superintendency for the Development of the North-East, to carry out an ambitious programme to develop the North-East's industrial sector, and thus wipe out regional differences in wealth. The cornerstones of this development programmes was an ingenious tax incentive scheme by which companies and individuals could deduct up to 50 per cent. of their income tax provided this money was invested in an approved project in the North-East.

The tax deduction scheme was

The tax deduction scheme was

These disappointing results are leading to a questioning of both the mechanism of the tax discount scheme at our opera-

An FAO study of 1971 pointed to the highly concentrated land distribution as the main cause of rural poverty. Indeed, there are 190,000 "latifundia" covering 157,000 acres in the North-East, and in Brazilian statistics, a "latifundio" is defined as a rural estate which is not being farmed rationally, given the prevalent farming methods. Thus it is scarcely surprising that 108 out of the North-East's 226 estates are not being farmed, despite the thousands of land-hungry peasants. For at the other end of the scale, 700,000 farms cover an area of 26m. acres, with an average size of 37 acres, which, given the North-East's farming techniques, is not enough to provide a family with an adequate income.

Landless

both handle all tax deductions of \$5,500 or less and choose the projects to receive the funds.

At the level of policy guidelines increasing attention is being paid to criticisms which claim that SUDENE has concentrated nearly all its efforts in setting up industrial projects at the expense of agriculture, and, even within industry, in promoting capital-intensive, technically sophisticated projects for producing goods to compete on the foreign market. It is argued that this type of project has an extremely limited multiplying effect on the regional economy as a whole.

Indeed, all SUDENE's pro-

As to the Government's main programmes for the North-East—PROTERRA and POLONORDESTE— together plan to expropriate only very small areas, settling in the foreseeable future just 15,000 out of the 3.4m families (12m people) of landless peasants, subsistence farmers and shanty town dwellers. Critics are accused to be attacking not less than a living base, then these programmes cannot be considered to be tackling the real problems of land concentration, the problems of land concentration that lie in the way of regional development.

jects together, over the 11-year period, planned to create only 280,000 jobs, not even keeping up with the additional supply of labour entering the market each year. And not all these jobs will, in fact, be created now, as the Buzios do not take account of the jobs lost through abandoned projects. The investment cost of the new jobs is also extremely high, about \$5,000 per job.

Indeed, the superintendent of SUDENE himself admitted in April that living conditions for the rural population in the North-East have not improved: "The economic development of the North-East has not benefited the people in the countryside. Most of the rural population still lives in a situation of relative and absolute poverty, with the worst of sectors suffering from malnutrition."

In another recent document the Government was even more candid: "The rural North-East,

development."

In all SUDENE's arguments illustrates very clearly the difficulties in the way any attempt to eradicate Brazil's regional inequalities through a type of industrial growth that is "imported" from the South and is not linked to a process of effective modernisation and development in the agricultural sector. Although SUDENE has been responsible for much of the region's industrial development, it has done little, if anything, to improve the living conditions of the mass of the population. Indeed, the gap between the North-East and the developed South has widened—and will continue to do so, creating serious problems for the industrial sector because of the lack of a regional market, unless structural reforms are carried out in the agricultural sector. These lie outside the scope of a development agency such as SUDENE.

Susan Branford

Boost for chemicals

MORE THAN half the money Brazil earned last year from its coffee exports went to pay for fertiliser imports. Because of

rocketing world prices, Brazil spent a sizeable U.S.\$310m. on fertilisers in 1974, as compared with only U.S.\$138m. the previous year. Although the value tripled, the volume only increased by 30 per cent. to 3.2m. tons. Another indication of the harmful effects on the Brazilian economy of last year's high world prices was the marked increase in farming inputs: while in 1973 rice kilts, bags of fertilisers and bags of beans bought 1 ton of fertilisers, by 1974 it took 20 bags to buy the same amount.

Indeed, Brazil's experience last year showed the country to be uncomfortably vulnerable in this sector, particularly as one of the Government's priorities is to increase agricultural pro-

the increase agricultural production so that primary exports can cover a large part of the cost of imports. And, in Brazil's developed south, where nearly all the virgin land has now been occupied, the main way of increasing production is by a rise in productivity through the use of fertilisers. At present, consumption of fertilisers is low in Brazil: an average of 20 kilos per hectare, compared with 212 kilos in France and 400 kilos in Japan. Thus the dilemma for Brazil is that, with present fertiliser prices, it has to increase greatly the volume of its imports in order to step up exports; a sad case of the faster you run, the further behind you get.

The ideal way out of the impasse is clearly to increase domestic production of fertilisers. Luckily for Brazil this solution seems viable and, moreover, in the fairly near future. The heaviest import ex-

pense last year for a single
 fertiliser was the \$200m, spent
 on 400,000 tons of phosphates,
 which was half of Brazil's total
 consumption.

This year, however, Sr.
 Shigeaki Ueki, Minister of
 Mines and Energy, triumphantly
 announced the discovery of a
 350m-ton reserve of phosphate
 rock in Patos de Minas in the

Paulo for the production of both
 "monocrotophats," a phosphate
 product used as a fertiliser, and
 insecticides and pesticides. It
 will be the second-largest plant
 of its kind in the world, with an
 annual production of 1,270 tons
 of "monocrotophats" and 500
 tons of sprays. The initial
 investment is \$17m, and the
 plant should start production at
 the end of next year.

state of Minas Gerais. The Government has speeded up mining procedures: the State-owned company, Cia. Vale do Rio Doce, has already formed a subsidiary, Mineradora do Paranaíba S.A., to start mining these reserves as soon as possible. Initial annual production of 150,000 tons should begin next March, increasing to 400,000 tons by the end of 1977. The rock will be marketed to the fertiliser manufacturers in the form of a phosphate concentrate containing 34 per cent P2O5.

Nitrates

The other main fertilisers that are imported are nitrates and potassium. As part of a \$1.3bn. fertiliser development plan, the Government intends to increase domestic production of nitrates by 1.5m. tons, and potassium by 1m. tons, by 1980.

The fertiliser manufacturers have drawn up ambitious plans on the basis of these predicted increases in the supply of raw materials. One of the large new projects is to be set up by Beker Industries, the U.S. company, in Paranaguá, in the state of Paraná. It is planning to produce 150,000 tons of phosphate products by the end of 1976, increasing eventually to a full capacity of 500,000 tons. Shell, too, has recently announced a new project in Paranaguá.

Many such as tyre manufacturing and plastics.

Two petrochemical "poles" have been set up in Brazil: the first and the largest in the Cabatió-Capupava area in the State of São Paulo; and the other in the State of Bahia, in the North-east, partly as a regional development measure. By the end of 1974, the ten companies with plants in São Paulo had invested \$384.5m., which had produced only 3.17% permanent jobs, which gives the very high job/investment ratio, of \$121,084 per job. For this reason, it has been suggested that the petrochemical industry was not the most suitable industrial sector to have been set up in the North east, a highly-populated region with a serious problem of urban unemployment.

Most of the petrochemical projects have been set up in the form of joint ventures, with the participation of Petrobrás.

State-owned oil giant), Brazilian-owned companies and multinationals. One example is Petroquímica de Camaçari S.A. In which Petroquiza has a 30 per cent holding, Mitsubishi Chemicals and Nisho-Iwai a joint 25 per cent, and the remaining 45 per cent is in the hands of private Brazilian companies. Due to the carefully managed distribution of shares, both Brazilian capital (State plus private companies) and private enterprise (Brazilian and foreign private companies) have always had a major share in the projects. However, in March this year, Dow Chemical announced that it is planning to set up a plant with an initial investment of at least \$500m., to produce 400,000 tons of ethylene, probably in Bahia.

Foreign

Although the final details have not been released, it appears that Dow Chemicals will have a majority holding in this project, thus for the first time a foreign company will control a petrochemicals undertaking. If this is the case, the decision was probably the result of recent studies that indicate that plans for expansion will lead to a 740,000 ton annual deficit of ethylene in 1980. Even if Petroquisa doubles its ethylene production to 800,000 tons, as has been proposed in a study at present being examined by the Government, Brazil would still have a considerable deficit.

There is now talk of setting up a third "pole" and states south over Brazil are vying for the honour, while the state of São Paulo is defending the viewpoint that the existing "poles" should be further developed.

Susan Branford

BRAZILIAN INDUSTRY V

Ambitious power plans

THE TOWN of Foz do Iguaçu, in the high forest where Brazil meets Paraguay and Argentina, used to be a place few people went to, except tourists on their way to the Iguassú waterfalls, drug peddlers, and car thieves heading for the Paraguayan border.

But in the past few months there has been a steady stream of jobless migrants into the town, attracted by the fame of the Itaipu dam which Brazil and Paraguay are starting to build on the Paraná River. Most of the migrants are still waiting for accommodation and work, but the town and the river will soon be transformed by the world's most ambitious hydro-electric project, an investment of over \$4bn. Dwarfing even Grand Coulee in the U.S., the Itaipu complex should produce 12,600 MW from 1982 and eventually 20,000 MW, which is more than Brazil's total generating capacity at present.

New sources of electrical power are an overriding priority in Brazil's industrial growth. Itaipu, the most spectacular example, is going ahead despite the vociferous objections of the Argentinians, who want to exploit water power further down the Paraná and would rather see something more modest than a 700-foot dam the other side of the frontier, and despite the fact that it will mean flooding out the area known as the Seven Falls, one of Brazil's most splendid natural beauties.

Although contracts for the turbines at Itaipu have not yet been decided, the Brazilians and Paraguayans will probably rely heavily on the experience of

both Canada and the Soviet Union, countries with similar resources and a similar problem of linking the sources of electric power with the centres of industry and population. Canadian interest in electricity in Brazil dates from the last century—the main power company in the São Paulo-Rio region is a Brascan subsidiary—and Canada is expected to take an active part in new hydro-electric ventures.

The abundance of renewable energy sources—which for the moment means water, although extensive use of solar energy is planned in the long-term—is a relief to a country that is still winning from the effects of the oil crisis. The rise in prices has pushed Brazil's oil import bill up to more than \$3bn a year, while the country needs all the coal it can get for steel production.

Proportion

Water power is already responsible for four-fifths of the electricity supply, in contrast to the U.S., for instance, which uses the same proportion of thermo-electricity.

Even so, the network of Amazon tributaries, reaching down into the centre-west region of the country, is still largely untapped, and less than 15 per cent of the estimated hydro-electric potential—140,000 to 150,000 MW—is being used.

In order to forestall the growing threat of an energy shortage in the 1980s, the Government plans to throw enough resources into its hydro-electric programme to increase

generating capacity to 50,000 MW in ten years' time, a growth of 250 per cent. The country's installed generating capacity was increased nearly 16 per cent last year and 11 per cent the year before. The 1974 increase included 1,246 MW in hydro-electricity, and it is hoped to expand this by nearly twice as much in 1975.

An important hydro-electric project at Sobradinho, halfway down the São Francisco River in the state of Bahia, is due to start operating in 1977, and Itaipu should, if it goes according to plan, be ready five years after that.

Meanwhile, other plants are being planned in the Amazon basin. Two rivers, the Araguaia and the Tocantins, have an estimated potential of 18,000 MW between them, and projects on the Uruguai and Trombetas rivers are being studied. On the Tocantins, two power plants have already been approved, one within easy reach of Brasília and the link with the electrical system of the south-east.

The Brazilians are again looking to foreign technology for connecting further-outlying projects to the south-east, where excess production may be diverted. The industrial "axis" of São Paulo and Rio de Janeiro consumes more

power than the bulk of Brazil's immense territory which lies to the north. The whole south-east region, where slightly less than half the population lives, uses up 70 per cent of the electric output.

This concentration is even greater when one considers the rudimentary level of electrification in rural areas, even in the

south-east, with the possible exception of São Paulo, which has the greatest resources to spend on rural development.

The harnessing of the rivers will provide the main part of the country's rapidly growing electrical needs well into the 1980s, when the hydroelectric contribution is expected to reach 85 per cent. From then on hydroelectricity will begin to cede ground as Brazil's nuclear programme comes into its own.

Nuclear

Under the auspices of a revamped nuclear authority, Nuclebrás, Brazil has started training nuclear engineers, aiming to take over a large part of production and processing activities in the 1980s.

The initial stage will be a series of nine or ten reactors, the first of which is

now under construction at Angra dos Reis in up-country Rio de Janeiro. The 600-megawatt unit, a pressurised light water reactor bought from Westinghouse, will be followed by two others on the same site of 1,200 megawatts each. Contracts for these have not been signed, but they will be of the same type, using enriched uranium (also purchased from the U.S.).

The Government is on the point of signing an agreement with West Germany covering part of the initial stage, together with the setting-up of industrial capacity and design teams in Brazil, as well as the exploitation of uranium reserves.

Talks have been going on at the same time with both the U.S. and France, and one or other is expected also to co-operate on an extensive basis in order to increase the range of technology available for further stages of development.



Building Rio's new underground railway.

Brazil is several years behind Argentina in the nuclear field. The Argentinians are already building their second nuclear plant, while the first unit at Angra dos Reis will not come on stream until 1977. The two countries appear to have gone in different ways, the Argentinians establishing enrichment facilities, enrichment facilities, estimates for the overall investment up to the year 2000 revolve around \$40bn.

ence, the Brazilians for the light water method.

The cost of Brazil's first series of reactors and the facilities for making parts for them is put by senior officials at \$1bn.

With further expansion in the 1980s and 1990s and the establishment of uranium time, Nuclebrás plans to develop the deposits, by which its own concentration facilities for the overall investment up to the year 2000 revolve around \$40bn.

Brazil produces uranium, the central state of Minas Gerais, and more promising deposits have been located in the Amazon region. Systematic work has only just begun, and it will take five to ten years to develop the deposits, by which time Nuclebrás plans to develop the deposits, by which its own concentration facilities for the overall investment up to the year 2000 revolve around \$40bn.

David White

Shipyard production booming

WHAT is probably one of the most expensive single pieces of metal ever made in Latin America sits waiting for delivery in a factory outside Rio de Janeiro: \$33,000 worth of ship propeller, and there are more and bigger versions to follow. The Anglo-Brazilian company set up to make them already has guaranteed business for the next five years. Whatever one wonders, happened to the ship-building crisis?

In seven years, Brazil has worked its way up from scratch into the top league of shipbuilders. This year it has made the Top Ten in Lloyd's Register for the first time, nipping into eighth place in front of such countries as Norway, Holland and Italy.

Helped by a strong domestic market and cheap labour costs, Brazil is now following the example set by Spain a few years ago, and is still riding high on the initial period of growth. In the first three months of this year, according to Lloyd's, no other country, except South Korea, showed an increase in shipping orders.

In March the Brazilian shipyards established their credentials as exporters with foreign contracts for 25 ships, at a price of \$295m. Over three-quarters of the parts and machinery are now made in Brazil, and the biggest yards are now producing their own designs.

The industry is almost entirely the province of seven companies, headed by the subsidiaries of Ishikawajima, Harima and Kawasaki of Japan and Verolme of Holland. These are the only companies

that concentrate on large tankers and bulk carriers, largely for the Brazilian iron ore and oil companies whose growing demand shelters them from the weak world market. Vessels of 130,000 tons deadweight have already been constructed, and Verolme has contracts for up to 277,000 tons.

The Brazilian-owned companies continue to concentrate on small- to medium-sized vessels of between 7,000 and 40,000 tons. The largest, the Itaipu shipyard in Rio de Janeiro, are making 10 ships a year of 15,000 tons or less and three of 37,000 tons. Unlike the foreign yards, they count on being able to sell 20 per cent of production abroad. Export marketing is co-ordinated, and four companies—Mauá, Conoco, Emau and Sô—operate an agreement on licensing arrangements from abroad.

The Brazilian Navy runs its own shipyard in Rio de Janeiro, where it has been making frigates under an agreement with Vosper Thornycroft of the U.K. The agreement covers four Mark 10 frigates made by Vosper in England—of which two have been completed—and a further two made under licence in Brazil. The vessels will be adapted for anti-submarine and general use.

Specialised

The National Plan for the five years up to 1979 provides for a \$3.3bn shipping programme, under which Brazil should produce 5.1m. tons of ships and import a further 200,000—the

latter being specialised vessels for which the country does not have the necessary technology.

Production at present has reached about 500,000 tons a year, but this is expected to double to a level of around 1m. tons in two years' time. On the basis of present contracts, at least one shipyard claims to be fully occupied up to 1978-80.

Now that the export phase has begun in earnest, Brazilian shipbuilding is now in a position where it can increase its autonomy. The main import item now is steel—a continuing problem, since the steel industry has been slowed down by the process of reorganisation—but turnover in ships is sufficient to justify local production of parts that previously had to be imported from the traditional shipping powers.

The propellers are an obvious example. The Birkenhead company of Stone, Manchester, Marine, one of the few companies working in the field, has up to now furnished most of Brazil's needs, but since late last year has joined with three Brazilian shipbuilding companies to make the same propellers in Brazil. Setting up local production facilities, at a cost of about \$1m, gives the company—Heliostel—an effective monopoly until another foreign company decides to do the same. Imports are now banned.

Local and foreign companies are meanwhile joining together to form a major ship repair outfit. Renave, which will have a capacity of up to 400,000 tons. The growth of Brazil's ship-

building industry has from the start been tied in with the expansion of the merchant fleet—them, the Brazilian merchant fleet consists of three: São Paulo, Petrobras, and Docmar. The shipbuilders need look less to the situation of world shipping than to the growth of Brazilian trade, which is some 25 per cent a year at present. But there are fears that the merchant fleet cannot go on expanding for ever.

If the domestic market decreases, as some in the industry believe, it will from 1977, then the shipyards will not be sitting quite so pretty. The present growth is based on being able to sell 80 per cent of production in Brazil, and the shipyards are not efficient enough to be heavily geared to export.

The Government plans to expand the merchant fleet to the extent that it can carry 40 to 50 per cent of trade, although the target figure of 11m. tons by 1979 may on present trends not be sufficient.

Freight

At about 3.5m. tons, Brazil's merchant fleet accounts for less than 1 per cent of the world's shipping, although it is the largest in Latin America after Panama. Last year the country spent about \$1.6m. a day on freight rates, more than half to Portuguese navigators. Pedra Alvaes Cabral discovered it in April 1500, he would have to wait until May to disembark. Apart from six private

companies, which have on 600,000 tons of ships between them, the Brazilian merchant fleet consists of three: São Paulo, Petrobras, and Docmar. The shipbuilders need look less to the situation of world shipping than to the growth of Brazilian trade, which is some 25 per cent a year at present. But there are fears that the merchant fleet cannot go on expanding for ever.

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The ports are notorious. Development has failed to keep up with the spectacular growth of trade over the past decade with technical innovations. The authorities are only beginning to think in terms of roll-on-roll-off facilities, the domestic route are cumbersome, and the international ports such as Santos and Rio de Janeiro clogged. Last year the country spent about \$1.6m. a day on freight rates, more than half to Portuguese navigators. Pedra Alvaes Cabral discovered it in April 1500, he would have to wait until May to disembark. Apart from six private

David White

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THE BOOM era of Brazilian rubber petered out after 20 hectic years. The boom era of Brazilian textiles stagnated after four. Or so at least it seems at the moment.

Since the great expectations for Brazilian textiles started in 1969, it has become the biggest investment sector after steel

and petrochemicals. The implementation of diverse, labour-intensive production units seemed ideal for Brazilian conditions, especially in areas such as the north-east where the industry could exploit locally available raw materials such as cotton. The impetus was backed up by a general trend elsewhere to move textile production away from the industrialised to the developing countries.

Carried along on the spur of economic expansion, and hopeful of a lucrative domestic market, industrialists committed themselves to heavy investments, which were backed up by Government incentives. From \$33m. in 1969, investments increased 16 per cent in 1970, then 54 per cent, 29 per cent in 1972 and finally 228 per cent in 1973, when it seemed that the industry would ride high on rising world prices and the possibility of shortages.

Exports of clothing and synthetics trebled in 1972 and again the following year. Overall textile exports in 1973 rose 123 per cent to \$325m., for the first time exceeding the combined cost of imported textiles and imported machinery to make them.

This year exports are unlikely to reach the 1973 figure. In the first three months the rate of foreign sales was less than half what it was at the beginning of 1974, before the industry realised just how vulnerable it was to changes in purchasing power.

Domestic consumption increased, but not as fast as the industry was growing. Between 1970 and 1974 production rose by about 48 per cent to 1.1m. tons from 743,000, while the

Brazilian market rose 36 per cent to 600,000 tons from 440,000. There are indications, however, that Brazil's own consumption of textiles is beginning to rise again this year, especially since the recent round of pay increases which have helped to counter-balance some of the effects of inflation on people's pockets.

This is as yet little comfort to the industry. About 5 per cent of the 350,000 people who were working in textile factories (there are an estimated 7,000 to 8,000 companies active in the sector) are now thought to be unemployed as a result of the sudden slump.

Overshot

The first warning signs that the textile industry might have overshot its potential market came in the second quarter of last year, although certain restrictions on expansion had already been imposed. From 1972, for instance, manufacturers who installed new equipment had to scrap most of the old machinery except in cases where most of the production was geared to export.

Investments in textile machinery suddenly dropped to \$110m. last year from \$400m. in 1973. As export orders for Brazilian textiles were cancelled, so manufacturers cancelled their orders for imported machinery, and the expensive equipment accumulated on the docks at Santos.

Last month the Government decided to step in more firmly and suspended investment incentives for textile production in the north-east, where all new industry is given special benefits. The move was greeted with

public sighs of relief in the industry, especially in areas not favoured by similar incentives. Last year the northeast development authority, SUDENE, approved 13 new textile projects in the region, which because of the benefits given to incoming capital has otherwise tended to attract capital-intensive ventures which bring little employment.

The lifting of regional incentives, which also applies to electrical appliances, also fits in with the Government's policy of reducing imports of capital goods. In 1973 Brazilian textile companies brought in \$158m. worth of equipment from abroad.

The Minister of Industry and Commerce, Sr. Severo Fagundes Gomes, is at the moment conducting a series of discussions with the various industrial associations in order to work out a new policy for further development of the industry. The general view is that the worst year is now over, and looking over the industry's calculations is the growing series of import restrictions. There are fears that this will further affect its main export market in the U.S., with whom the Brazilians still have to agree on a new textile pact in conformity with recent rulings by GATT. The original pact, signed in 1970, applied quotas only to cotton goods, but the tariff rules require comprehensive agreements including wool and synthetics. The Brazilians are believed to be unwilling to accept quotas for artificial fibres and textiles, and to be pressing for bigger quotas for cotton materials.

British plans to step up surveillance of textile imports, announced recently by the Department of Industry, concern about the possibility of similar moves elsewhere. Europe, where Brazilian textiles have only recently begun to compete with those from Hong Kong and Korea, have served to unsettle the industry further. While Brazilian clothes have emerged on the racks of American and European shoe stores, Brazilian shoes have been through a comparable period of growth with fewer tantrums. The industry, which is concentrated in three towns in the Grande do Sul and São Paulo, doubled its production by 1970 and starts from 70m. pairs in 1970 to some 140m. last year. In cruzeiro terms this was a sixfold increase, and the growth has continued so far this year. The value of exports, 90 per cent of which are destined to the U.S., increased 15 per cent in the same period, a 28m. pair last year, for instance, keep Canada from getting a foot. The imposition of tariff against Brazilian shoes in the U.S. has done little to deter the trend—although a more recent countervailing duty against handbags has proved more worrisome to the leather industry. Brazilian shoes remain competitive with those imported from Spain and Italy, while Brazil has been undercutting 20 per cent or more. However, the shoe manufacturers have learnt the lesson of depending on a single export market in days when protectionism is in the air. As protectionism is in the air, they have just launched themselves in the Soviet Union.

David White

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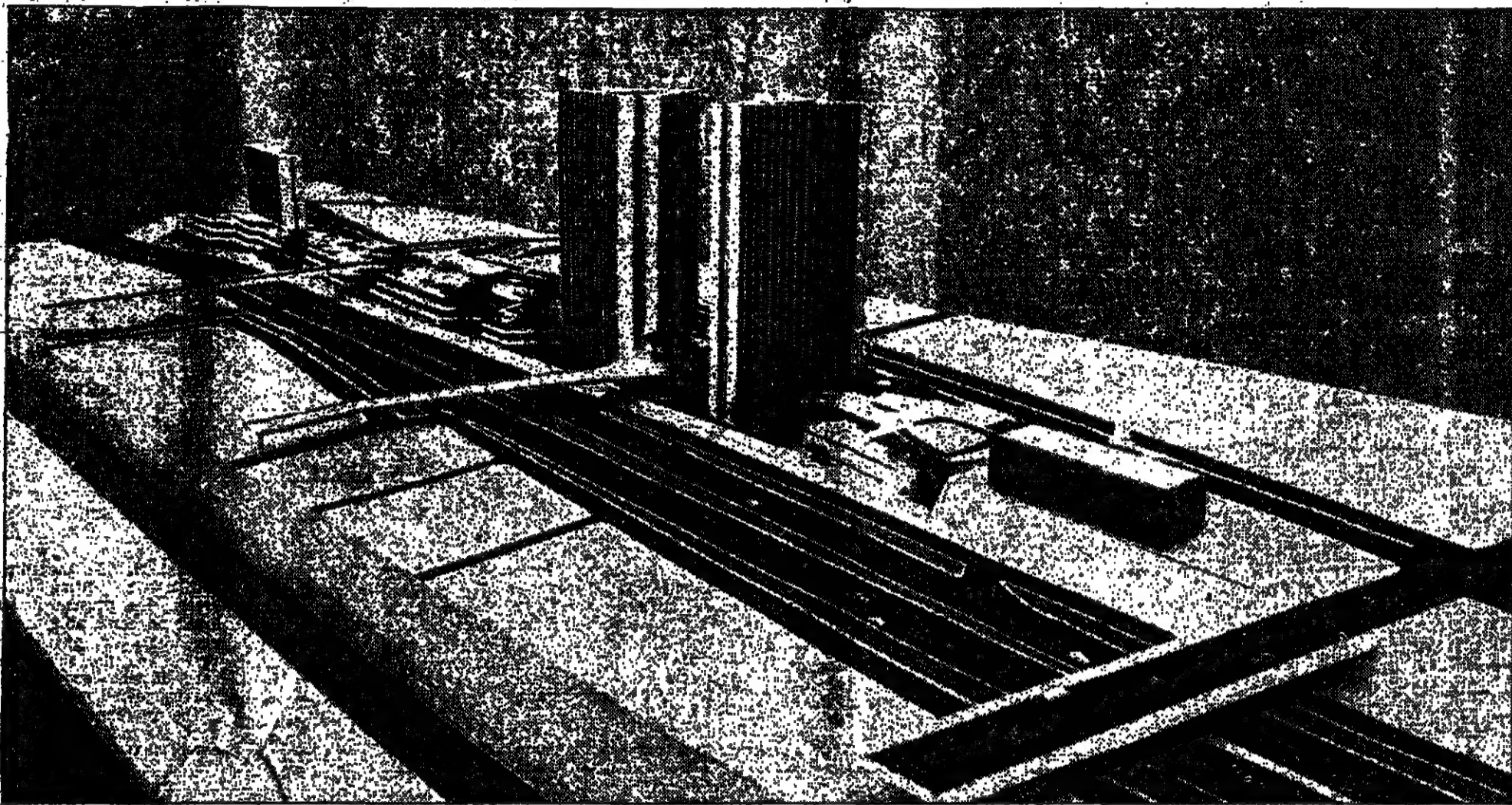
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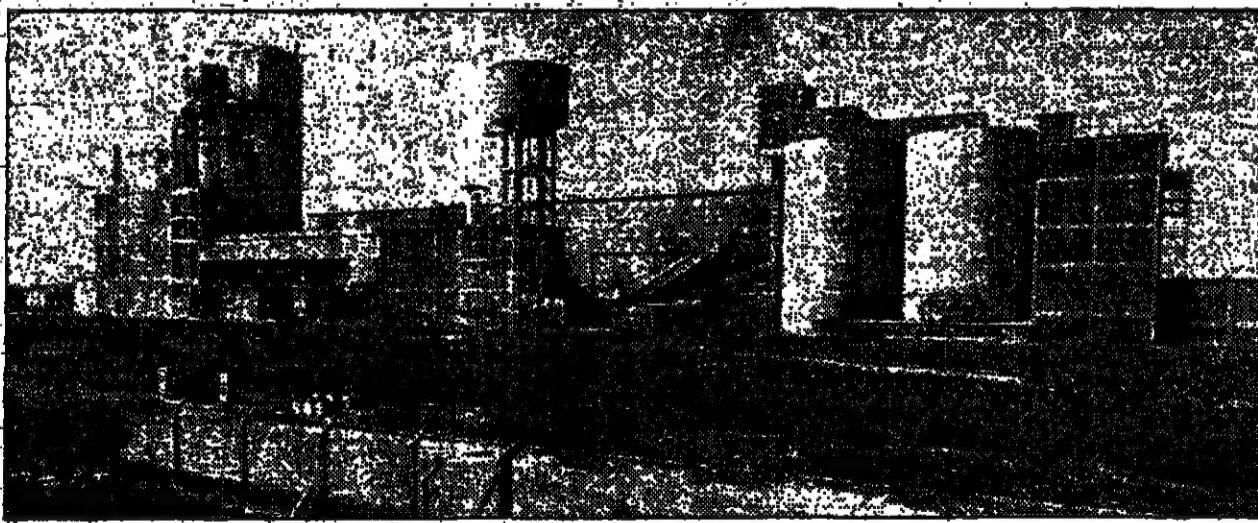
In the heart of São Paulo — the world's fastest growing metropolis — Guarantã will build what amounts to a landmark in Brazilian urban development. The project is known by the name of "Nova Vergueiro", and its objective is the socio-economic recuperation of an area which has become decadent, transforming it into a multi-purpose centre for the city's inhabitants.

As a result of a public bid in open competition with other contractors, Guarantã was awarded with the construction contract by the São Paulo municipal government. The project consists of two office towers of 60,000 m² each, a shopping centre, a 400-room hotel, and a parking area for 3,700 motorcars. These jobs total no less than 300,000 m² in constructed area.

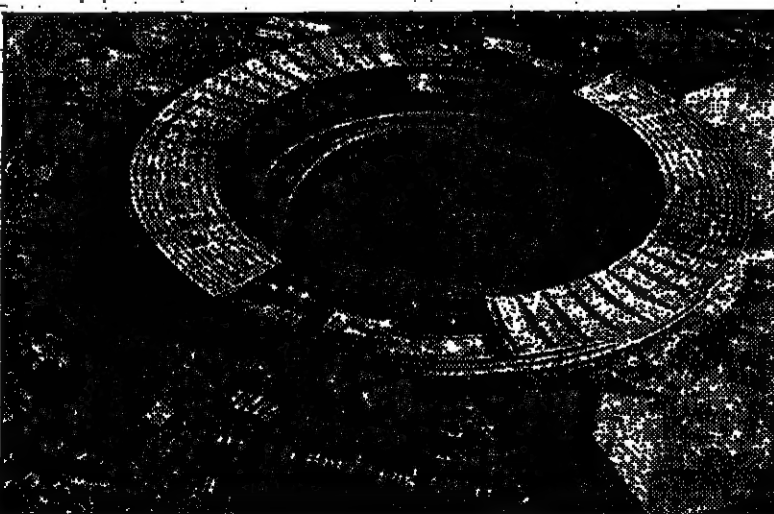
The challenge of this project can be measured by the total investment that will be involved: US\$ 100,000,000. Within 4 to 6 years, the completed project will be open to the inhabitants of São Paulo and to all Brazilian and foreign visitors. The area will be further enhanced by a new underground transport station where more than one million people will circulate daily.



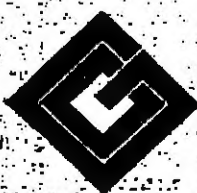
Data processing centre and Office of the Treasurer of the Banco do Brasil in São Paulo. This sophisticated building will be completed before the end of this year.



This is one of the many industrial building contracts awarded to Guarantã. The project above is one of the numerous cement plants currently under construction by Guarantã, the total production capacity of which will be 3 million tonnes of cement per annum.



Football stadium in Goiânia (near Brasília) with a capacity of 90,000 spectators. Construction involved 5,200 tonnes of steel, and the pouring of 60,000 m³ of concrete.



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nt Eng. 10a	30	2.4	16.2
nt Spring 10a	17	24.3	114.7
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Sugar	47	87	103	
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